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Experiences IN COLONY TREATMENT AND AFTER-CARE.

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THE Cambridgeshire Scheme of After-Care having been in operation in its experimental or its completed form for a matter of two years, we have been urged to put together the experiences that have been gathered and some of the results that have accrued from its application in the area concerned.

RESULTS OF SANATORIUM TREATMENT.

Sanatorium treatment is at the present time on its trial. Insurance Committees all over the country have followed up with critical eyes many of the cases that have received treatment at various sanatoria. A few counties have their own sanatoria, and have been able to observe the results obtained from a patient's stay at such an institution for a matter of three months or so. It is only comparatively recently, however, that sanatorium treatment has been available for the working man of this country, and it is obvious that the results are not what we were led to expect. It is stated on very good authority that the results of sanatorium treatment vary according to the class of person treated, and that amongst the well-to-do the results of treatment are three times as good as are those obtained with the working man. Taken as a whole, then, it may be asserted with confidence that sanatorium treatment for the well-to-do is, and has been, a marked success, but that when applied to the working man the results have fallen far short of expectations.

We have therefore to consider the different factors which influence these results and profit, if we can, from the experiences of various sanatoria, especially those that have observed for some considerable time the records of their patients after they have received and followed up treatment. It is evident that the mode of life continued by the patient after he has received sanatorium treatment is of paramount importance. It is clear, moreover, that another important factor in the result is the length of time that has been devoted to that treatment; whilst it is evident that the unfavourable results which have been observed as following the treatment of the working man are due, in great measure, to the strict limitations of time which have been imposed by various Insurance Committees on the length of institutional treatment.

It would seem that the method of procedure had been somewhat as follows. A patient is selected for sanatorium treatment. Very often the disease is well marked, but notwithstanding this unfavourable feature the length of treatment is seldom, if ever, increased, but is strictly limited to the regulation period of three months. There can be no doubt that such a method of procedure is practically useless. This is self-evident when it is remembered that the man is now compelled to return to the surroundings in which he contracted the disease and is given little or no opportunity to carry out treatment which he obtained as a matter of routine at the sanatorium. It is obviously useless to instruct such a patient to "carry on" the mode of life which for three months he has been obliged to live, when in all probability he has now to return to a crowded street in which fresh air and sunshine are extremely limited and the food-supply absolutely inadequate.

The first consideration, therefore, before condemning sanatorium treatment as utterly worthless is, Is it practicable extend the length of the institutional treatment? It is clearly impossible, without unlimited funds at our disposal, to prolong sanatorium treatment as at present carried out. The expenditure of money on buildings would be enormous, and buildings, to say the least, can contribute but an infinitesimal amount to the real treatment of the disease. The essentials of successful sanatorium treatment have been demonstrated, repeatedly, to be of the simplest character, and for cases which are at all suitable for such treatment it is useless to expend money on bricks and mortar, glazed tiles, and parquetry floors, when all that is required is adequate shelter from inclement weather and the opportunity for the patient to engage in interesting and instructive work.

Causes of Failure.

Undoubtedly one of the great causes of the failure of our present plan of sanatorium treatment is the manner in which it is carried out. It cannot be gainsaid that the medical profession has been far too timid in the application of the principle of "work" in the treatment of the consumptive working man. The oft-repeated injunction that the man must be extremely careful, must avoid any exertion, and must keep himself in a state of perpetual fear of a sudden hæmorrhage has been carried to great extremes.

Again, it is obvious that if we desire to avail ourselves of the educational facilities of a sanatorium, we defeat our own ends when we erect elaborate buildings and equip and fit them up on the present lavish scale. A patient will quickly succumb to the idea that his "cure" is more a matter of architecture than the provision of fresh air, graduated work, and an adequate food-supply. It must be the experience of many medical men who have sent patients to sanatoria that on their return they have lost the moral courage to make a fresh start amid surroundings which, not really unhealthy, require but little adaptation and the necessary courage to be made entirely suitable for the reception of patients in whom the disease has been arrested.

Again, an institution in which the working man is educated to imagine that a life of ease is the one which he must hereafter enjoy is morally bad for the patient, in addition to which it involves a distinct loss to the general community to which he has to return and in which he will have to live and ought to work.

The patient returning home is thoroughly dissatisfied with his surroundings and refuses to make the effort which, in the interest of the man himself, it is of prime importance he should make. If this dissatisfaction led to a keen desire to improve his condition and that of his neighbours, much good might come of it, but as a rule the desire does not take this direction. It induces rather a feeling of depression, and the patient regrets that he is unable to enjoy the good things with which he was surrounded at the sanatorium, and without which, he has become convinced, his cure cannot be effected or completed, and it is with no feeling of encouragement that he attempts to restart his former mode of life. The gulf fixed is too great, and he realises, or believes that he realises, that without an adequate income he is powerless to start any system of reform.

To what authority can he possibly turn for help? A self-respecting man scorns the helping hand of charity, and in how many places in England and Wales can a consumptive be provided with a model cottage and suitable work to which to turn? There seems to be no single authority in the Kingdom by which these arrangements are made. Indeed, the greatest efforts put forth, so far, are those of After-Care Associations, which offer small doles of food or money to enable the man to return to some out-of-door occupation at which the wages earned are miserably low and the labour market extremely limited.

When we come to review the possible occupations for ex-sanatorium patients, it must be confessed that they are few in number, and that they are limited still more in that the number of employers who are willing to accept the services of an ex-sanatorium patient are few and far between, and will remain few until they become properly educated in this matter. An ex-patient then, having for three months tasted the joys of an open-air life surrounded by every care, receiving every attention, with every comfort ministered to, with little to do and supplied with adequate food, unfailingly despairs when he has to return to his own home and start afresh what he believes will be a losing struggle.

Direction of Treatment along Industrial Lines.

From all this it is clear that before sanatorium treatment is condemned in its entirety, some effort should be made to correct faults which obviously detract from its value. Taking into consideration these various factors the first line on which to make an advance is to alter, radically, sanatorium treatment and endeavour to direct it along industrial lines. If the treatment can be prolonged in such a way that the patient can be made to realise that he can work satisfactorily for a certain number of hours per day we shall have overcome one of the greatest obstacles to effectiveness that at present bars our way to further progress.

There are two ways in which this can be done. One is to prolong the actual treatment at the sanatorium, and the other is to provide suitable accommodation and give the working man an equal opportunity of carrying on the treatment in his own home: an opportunity enjoyed by his more fortunate rich neighbour.

It must be borne in mind, however, that if the treatment is to be prolonged in an institution it should be more carefully modelled on lines of useful and remunerative work. The working man objects very strongly—and naturally—to useless labour, which is not only useless but irksome, savouring of the treadmill rather than of the tonic.

He is quite ready to admit that labour is a necessary part of his treatment, but he is also ready to dispense with that form of treatment at the first available opportunity. Patients will readily, and with avidity, swallow gallons of obnoxious fluid in the form of medicine, but the appetite for irksome toil soon becomes nauseated. What is the remedy? Substitute for meaningless labour work in which the patients can take a keen interest. Stimulate them to take an actively intelligent interest in the task in hand, and as their working capacity becomes gradually restored let the patients receive a wage for the labour of their hands.

The problem of remunerative work both inside and outside an institution is one of the most difficult with which we have to deal and one not lightly to be discussed or put aside. On the one hand, however anxious one may be to stimulate the interest of the patient in the task he has to perform (and although the performance of that task is directly and distinctly for his own benefit) it must be borne in mind that various cracks soon become apparent whereby the man's labour may appear to leak into the gulf of exploitation. It is sometimes, nay frequently, felt by the working man when he is called upon to perform various sanatorium tasks that, willy-nilly, he is being imposed upon, that the labour is not only not for his particular benefit but is being exploited by the institution as a means of obtaining free labour. That certain working men have these ideas there can be little doubt, but we cannot accept it that they are those of working men, who have enjoyed the advantage of treatment at a sanatorium, as a class. Nevertheless, if such a feeling exists, it will soon spread, and its extension will seriously prejudice the good to be achieved by such institutions. It is our duty as far as possible to remove these erroneous ideas, and it is necessary for us to place ourselves in the position of these patients and look at the problem from their point of view.

In our work we immediately came into collision not only with a friendly society rule but also with the law, which states that no man may be in receipt of sick-pay whilst he is engaged in remunerative work. In Cambridgeshire, however, we have been fortunate in the formation of the After-Care Association through the action of which this apparently almost insuperable difficulty has been overcome, so that the road is now clear for the reformation of institutional treatment on colony lines.

THE PROBLEM AS VIEWED BY THE WORKING MAN.

In order to obtain light on the outlook of the working man on some of the above points it has been the practice to give to each patient coming into the Bourn Colony a set of questions with a request that he will answer them as fully and as frankly as he can, the object being to obtain a picture of the man's state of mind and to gain some idea of how the problem presents itself to him. Here are reproduced two sets of answers from patients having widely different outlooks on life. One of these men was an ex-employee of a large Glasgow firm of engineers, the other a traveller for a firm of engineers. The answers are here given exactly as put down, and are instructive as showing how clearly the difficulties of the problem of after-care is grasped by the "working man."

Views of an Engineer.

Question 1: Would you be prepared to accept a situation in the country after your treatment at the colony has come to an end?—Answer: If strongly advised by the doctor, yes.

If the country is more suitable than the town for the ex-patient it follows that in the majority of cases the patient would accept with good grace the inevitable, although to do so strong prejudices might have to be overcome; but in answer to—

Question 2: What conditions of employment would you consider satisfactory?—Answer: Suitable employment must be found, and the question arises: Can sufficient employment be found of a suitable nature for the number of people suffering from tuberculosis? This must not be taken as want of faith in the doctor.

To make it quite clear take my own case. Up to the commencement of my illness I was in the regular employment of Messrs. Barr and Stroud, Glasgow, at whose shops the conditions are far in advance of any engineering firm in the U.K. Good wages were paid, and the writer was given 1s. per hour for a 50-hour week; all time over this was paid for at the rate of 1s. 6d. Engaged as a tool maker, I was eventually given the position of a brading hand on a milling machine. The wages of the brading hands have been advanced during the last nine months.

As this shop is in a large city returning to it is out of the question. Would a man who has been used to good working conditions with fairly good pay accept a job in the country—say light work on a farm at 18s. a week with cottage? I think not.

A mechanic might be advised to take up motor-driving, but how many people realise that to pay a mechanic 40s. a week with a cottage is cheaper in the long run than a handy man at 25s?

The writer would require a situation with regular hours, one half day a week, no Sunday work, with fairly good pay, and some prospects of advancement.

A situation hard to find. Then what work is there for this class of tuberculosis patient? I do not know; therefore it is impossible for me to answer the question of working conditions.

Question 3: Would you desire a temporary or a permanent situation?—Answer: Permanent. Age is a large factor which enters into the choice between a temporary and permanent situation. A married man or one with the intention of being married finds it undesirable to keep changing his mode of living and the manner of getting that living. Again, of what use is a temporary situation to an ex-patient? As soon as that employment ceases he is again looking for another job, and in the meantime what is to become of him? His resources, if any, would soon be at an end, and in a very short time his position is worse than before the commencement of his treatment.

Question 4: If not, state the reasons which influence your decision?—Answer: Not applicable.

Question 5: If a situation were found for you (at your own particular job) and you were in close touch with the Colony or similar institution, what conditions of employment would you consider satisfactory?—Answer: Were the treatment to last for a long period on the colonisation system, and the patient put to work at his trade or to do work of a marketable value, I do not think any other conditions could prevail except those as between employers and employees.

Take a carpenter from Cambridge, where the rate of 11½*d.* per hour is paid, give him three years' treatment, during which time he has an average of 280 working days in a year, doing each day four hours work. Can it be expected that he should do a work value of £42 and receive nothing in return? This is taking very low figures, because it is more than probable that he would work eight hours a day during the last year. For the married man this would be impossible, unless his family were provided for.

A man must be allowed to retain his self-respect, independence, and liberty as far as the treatment will allow; this he can do only if he is paid a living wage for his work. I do not think many men would accept voluntarily treatment under any other conditions.

Could they be compelled? I certainly think their friends would have something to say. This would matter little if there were only a few cases of tuberculosis, nor do I think that the voice of the trades unions should be overlooked or underestimated. Would they stand by while a large number of men were put to work at various trades all over the country at wages below the general rate or no wages at all?

The cure of tuberculosis is of greater national interest than individual interest, therefore the State should make adequate provision for its treatment, also for the patient after treatment has ceased. The writer may be accused of being selfish and asking too much, but it must be remembered that the working man finds it next to impossible to help himself, he cannot create work of a suitable nature, but must return to objectionable surroundings and ultimately be a source of danger to other people; therefore, is it too much to ask that provision be made for him?

I have wandered far from the point, but probably the questioner will be able to sift from these scrapes of the pen some sort of answer to his questions. For what they are worth I should like to make one or two further remarks on the last question.

If a system of colonisation were started and it was thought necessary in the case of a married man to remove his family into the estate it would, of course, be necessary to give the family circle some advice. This should as far as possible be done by the medical officer. Visits by lady health visitors are not, as a rule, appreciated by the better educated of the working classes, and the whole thing is aggravated by the fact that public bodies usually appoint maiden ladies to these positions, and however well trained they do not understand the intricacies of the domestic hearth.

Where a large estate and a large number of patients are being dealt with it might now be desirable for a patient to occupy a shelter during the later stages of his treatment. For a single man boarding out on the estate institutions might be provided.

Where the former was in vogue I think the patient should be allowed a certain amount of discretion in the choice of place, as personally I should strongly object to board where there was tubercular trouble. Where institutions or such like are resorted to they should be designed with a view to giving each patient one place of privacy.

L. P., Bourn Colony, November, 1916.

Views of a Traveller for Engineering Firm.

Question 1.—My *answer* is in the affirmative, in view of the fact that the health of myself and family would benefit in consequence.

Question 2.—Answer: In my particular case it seems rather a difficult problem to find suitable employment in the country village, as such places do not offer many opportunities to the commercial man who has received training appertaining to city requirements, and that I am of the opinion that one could not lay down any stipulations regarding the nature of the work desired, but simply state as the only conditions that one were given a fair wage in order that a good education could be given one's children (which matter I refer to in a later paragraph) and to enable one to live in respectable circumstances.

Question 3.—Answer: This opens up rather a difficult problem in the case of the married man, as having a wife and family dependent upon one, one most naturally desires to obtain employment of as permanent a nature as is possible under ordinary circumstances, although I would state at this juncture that I am not foolish enough to imagine that any employment is absolutely permanent, as neither employer nor employee can foresee what circumstances may present themselves which would necessitate one relinquishing the duties one was fulfilling. Nevertheless, I would certainly wish to enter into an agreement whereby my services would be retained so long as I continued to fulfil my duties to the entire satisfaction of my employer.

Question 4.—Not applicable.

Question 5.—With reference to that question, I am convinced that to answer it fully one would be required to state one's views under various subheadings; therefore I propose to do this as follows:—

(a) *Mode of living.*—I mention this first, as I consider it the most important factor in dealing with this question. One must bear in mind the fact that this scheme is intended for persons who with ordinary care and few exceptions will be in a position to carry on their daily life as heretofore. Therefore I am fully convinced that the married man will wish to have his own private dwelling in which he may live with his wife and family. Hence this is the first and most important condition I would lay down before entertaining the idea of taking one's position in connexion with this scheme.

(b) *Nature of employment.*—I think that difficulty would arise in finding employment for some men, as in my own particular case a tuberculosis institution does not offer any opportunities for one of my calling, therefore the only alternative would be for me to accept a post of a different nature from that which I followed previous to joining the Army.

I do not consider it necessary at the moment to expound one's qualifications, but I would, under the circumstances, be prepared to consider any position of trust on the organising, administrative, or secretarial staff if such were offered me, if some mutual agreement could be arrived at concerning remuneration, which question I propose to deal with next.

(c) *Remuneration.*—In dealing with this question one cannot state anything definite in view of the fact that one does not know what position one would be offered, therefore one must consider to what extent one would be prepared to make financial sacrifices in order to have work and general surroundings of a favourable nature, thereby retaining that most valuable asset "good health" and also to be of economic value to one's country.

One wonders why any ex-soldier should be called upon to make financial sacrifices, when one considers that the disability from which he is suffering has been caused solely through military service, as one hears of endless committees, &c., being formed to assist, train, and find employment for ex-soldiers who have lost limbs, &c., and also to give financial assistance to dependants whilst undergoing training for a new calling if the soldier's income is reduced through such incapacity, yet the discharged tuberculous soldier is left to struggle on on probably half the income of pre-war days.

I have no doubt that the time has come when this question will have to be faced and I fail to see why some post in connexion with a sanatorium or similar institution could not be offered and the salary supplemented by a permanent pension, thus making his income near that which he was in the habit of receiving before his patriotic instinct took him to the recruiting office, full of health and energy.

I venture to think that the reader may think my remarks are sentimental, but I feel I cannot find words to express my feelings of indignation towards those responsible for the welfare of the discharged tuberculous soldier.

(d) *Education of children.*—This point must not be overlooked in accepting any post in connexion with the scheme.

It was my ambition in pre-war days to endeavour to attain some position which afforded remuneration sufficient to allow one to devote a sufficient sum of money to this matter, as I consider it most essential that one's children should be given an opportunity of receiving a sound education, and therefore I should not consider the country village one of the best places to receive same. I have no doubt, however, that some arrangement might be arrived at whereby one's children could be sent to a boarding school if one's income were sufficient to defray expenses.

I now close, trusting that the foregoing remarks will be received in the spirit in which they are penned, my endeavour being to offer some suggestions which would allow the discharged tuberculous soldier to become a national asset instead of a danger and an encumbrance.

A. H. C., Bourn Colony, August 18th, 1917.

Consideration of Above Answers.

These answers to the questions submitted bring out one or two points which are well worth considering. One is the very important fact that both patients realise how essential it is for their recovery that they place themselves for some considerable time under conditions insisted upon by the After-Care Association. They do not hesitate about this; any hesitation, as illustrated by these two particular examples, and all are practically unanimous on the point, is due to the fact that no concrete proposals are ever placed before the men. It is, as Paterson has repeatedly said, the height of folly to say to these men, "You must find a light job in the country and carry out the treatment there." Would anyone in his senses make such a remark to a well-to-do patient? Of course, the answer is "No," and the patient is advised to live under conditions which you know are within his reach. The only difference is that the well-to-do patient has, at his own expense, the opportunity to live under these ideal conditions—conditions not available in the case of the working man, and as in the case of the tuberculous soldier, so with the tuberculous civilian working man, an opportunity should be given him to follow out medical instructions under improved conditions. The generous pension given by the State to tuberculous soldiers will, if properly handled, be the means of establishing the principle of "equal opportunity," a valuable phrase, but hackneyed from its frequent repetition in another sense.

Provided that the surroundings are healthy and adequate the patient may be allowed to return home, but he should then be followed with a course of after-care, which ensures that he is provided with an adequate food-supply and that the conditions under which he lives, and the rooms and shops in which he works, are not obviously undesirable and unhealthy.

CAMBRIDGESHIRE AFTER-CARE SCHEME.

The following are the lines on which the Cambridgeshire After-Care Scheme has been inaugurated, and, working in close coöperation with the Colony system, good results have been obtained and still better are confidently anticipated.

The Cambridgeshire After-Care Association was formed for a very special purpose. It was designed to help such cases as presented certain favourable features—so to assist patients that the benefit of sanatorium treatment might be considerably prolonged, it being hoped that the great gulf which was fixed between sanatorium conditions and those of ordinary life might be bridged over with some degree of success at any rate.

In any scheme of after-care it is obviously useless to treat all cases as if they were identical. The difference existing both as to the extent of the disease and the resistance which the patients offer to the spread of the disease, as well as their social conditions, working conditions, and a great number of other conditions, must be studied separately.

Cases of tuberculosis are divided into three categories. Early cases, which are most favourable for sanatorium treatment; middle cases, which, as a rule, are not so favourable; and advanced cases.

Gradual Return to Suitable Work.

In the first category after-care is designed to place the patient in such favourable conditions that the maximum amount of benefit may be derived from a stay at a sanatorium, *and that such benefit shall not be wasted when the man returns to his former occupation.* Again, after-care in this group is designed to enable certain of the patients to take up more suitable occupations than those on which they were engaged when they contracted the disease. The working capacity of such patients varies greatly, but as a rule a large proportion of them can be allowed to work for almost, if not quite, a full working day. It is really a question of time and grading, for in many cases if the work is resumed gradually the patient adapts himself to full work more readily and for a much longer period than if he is at once plunged into full work on his return from a sanatorium.

The principle which has been taken advantage of in the Cambridgeshire After-Care Scheme is that which allows a patient gradually to resume his former occupation, if this is suitable, under conditions as nearly ideal as possible. The great dividing line which separates the working man from his more fortunate neighbour is that involving the presence or absence of the opportunity of gradually resuming a former occupation after treatment has been carried on for a considerable time, during which time the patient has had to lead the life of an invalid. A well-to-do man never thinks of returning to a full day's work immediately on his return from a sanatorium. He takes up his tasks very gradually. He has no anxiety as to his financial position, and has no difficulties about the provision of an adequate food-supply for himself and his family. He has ample opportunity of taking long rest-periods, and any danger of over-fatigue is entirely eliminated.

Until the Cambridgeshire scheme was inaugurated the working man patient had no opportunity of restarting under similar conditions. If he dared to graduate his work the resulting financial loss crippled him and his family so

severely that in a very short time a great reduction in his food allowance was inevitable. The only other course open to him was to forfeit his independence and become dependent for help upon some charity or similar organisation. When he resumed his occupation, to whatever small extent, the contribution he received from his Friendly Society, part of which came from the State and part from the private side of the club, was immediately withdrawn, and left without any visible means of support he was forced to plunge into the turmoil and strife of competition to earn, if possible, enough to support himself, his wife, and his family.

We have previously noted that it has been stated on the highest authority that the chances of recovery of a well-to-do person are three times as great as that of a working man, the only apparent difference between the two being that the rich man has an opportunity of gradually resuming his employment—employment of a suitable nature, whereas the poor man has to return to unsatisfactory work for unsatisfactorily long hours—*at once*.

Is it not now desirable that some definite arrangement should be made for the continuance of pensions for some time after the patient is, superficially, fit for work? At present a pensioned tuberculous soldier is called periodically before a board convened to revise his pension. He is there questioned as to how long he can work and how much he can do, and according to his answers his pension is continued or curtailed. Here, surely, is a weak strand in the rope of our scheme; no particulars are, as a rule, furnished by the institution in which the patient has been treated or trained as to his working capacity or as to the extent of the progress of the disease as determined by continuous observation of the doctor in charge.

After a necessarily cursory examination the patient's pension may be reduced just at a time when plenty of food and further encouragement are required to bring the case to a successful issue. If these pensioners are to be induced to work in our farm or training colonies, we must understand that no board will, without consulting the colony physician or the tuberculosis officer in charge of the patient, reduce a pension too rapidly.

It would certainly be a move in the right direction if in cases of tuberculosis reports and suggestions from sanatoria or colonies in which the patients reside could, as a matter of routine, be forwarded to the boards before which these patients have to appear, or that consultations should take place between the pensions boards and the medical officer in charge of the area—the tuberculosis officer, who, usually, is the only person capable of giving a complete and satisfactory return, &c., of the progress of the case and the working capacity of the patient.

The Cambridgeshire scheme, then, was founded with the object of overcoming this fundamental drawback, and we think that the time has arrived when it may be well to publish the results which have already been obtained and to indicate the lines upon which the desired ends have been attained.

Outline of Scheme.

The After-Care Association is composed mainly of members of the various Friendly Societies operating in the county, and is essentially, in every sense of the term, a democratic institution. Each society has its Lodge or Court in every town or village in the administrative county in which the association works, and is represented on the association by a certain number of members. It is clear that the county is divided for this particular purpose into very definite areas, each area having a representative in touch with the local conditions, and having personal knowledge of every member of the particular Lodge or Court. The advantage of such a connecting link between insured persons and the association is of inestimable value, as it is clear that without such personal touch and supervision there is a great danger that the malingerer may escape detection. The arrangement arrived at, however, renders it difficult for the medical adviser in charge of the scheme to be deceived by the applicant for the grant, and, what is even more important, enables a personal local touch to be maintained between the medical officer and the patient.

In this scheme grants are made on the recommendation of the medical officer of the association—the tuberculosis officer. Applications are often countersigned by the general practitioner in charge of the case. There are therefore very efficient safeguards from a medical point of view that the applicant is a suitable case for the operation of the after-care scheme, and it is obvious that no undue pressure can be brought to bear upon the two medical men to authorise the expenditure of the funds of the association, except to the best advantage. Moreover, as explained in the previous paragraph, a very effective check is maintained by the local secretary, who, as a rule, is a working man well versed in local conditions, with a knowledge of the personal needs of the patient and of the desirability or undesirability of assisting the patient in the way to be explained presently. The association works, then, with a central executive committee, with the medical officer as honorary adviser, and through a series of local Lodges. The personal element is thus utilised to its fullest extent, whilst the knowledge available from these various sources is used in advancing the interests of the patient and at the same time in safeguarding those of the association.

The association pays by cheque certain amounts, which may be varied from time to time, according to the needs of the case. The sum expended is, as a rule, equivalent to that which a patient would forfeit under ordinary Approved Society arrangements when he passes off his club and starts his ordinary work. When a man returns from a sanatorium and it is found that he can resume his former occupation as suitable, the employer is communicated with, sometimes by the secretary of the association, or more often by the medical adviser, the graduated work scheme is explained to him and his help is sought. It has been found that when the matter has been fully explained to them the employers in the county are very sympathetic towards the scheme and are willing to help in any way they can. It has been made a matter of principle to accept as little as possible in the way of monetary grants from the employers concerned; this is important, as it is desirable that they may not have an idea that they are acting as philanthropists. The only concession they are asked to make is that the men may be allowed to work for them in the manner and under the condition presently to be explained. It is made clear that according to his strength the man should work at first, say, four or six hours a day; and the employer is expected to see that the patient receives the ordinary trade union rate of wages of the district for the number of hours he actually works. This arrangement has been found to work very satisfactorily in the area concerned, although some employers have expressed doubt as to whether such an arrangement could become permanent, especially in times when labour is plentiful and when it would not be difficult to get as much labour as is required at full-time work. Whatever may be the danger of this difficulty arising in the future, up to the present it has not presented itself.

A Typical Case

Let us take a typical case—that of a farm labourer who has passed through a course of sanatorium treatment.

The man working for a farmer for four hours a day will receive for that four hours the ordinary rate of wages payable for that time in the district. He will thus receive 10*s*. per week from his employer. This will be supplemented by the After-Care Association with 10*s*. per week, the amount of sickness benefit the man forfeits by undertaking to work, and so coming "off the club." It has been found that as a general rule a man is quite willing and anxious to work the prescribed shorter hours under these conditions, for he feels that he is thus carrying out to the letter the treatment which he receives at a sanatorium.

The man is in the meantime kept under careful observation. It is usually possible for him to present himself for examination at the dispensary at the end of three weeks. A report is furnished by the health visitor as to home conditions; the local secretary is satisfied that the man is endeavouring to carry out instructions, and if his condition is found to be satisfactory the period of work is increased by two hours per diem for the next three weeks. The man now receives a bigger wage, but the "sickness benefit" is kept at the same figure in order that he may be encouraged to continue to earn the larger wage when he knows that his perseverance will not be prejudiced by the premature cutting down of the allowance from the association.

Another examination is made at the end of a specified time, and if things are again found to be satisfactory the man is encouraged to put in full time, the allowance from the association being maintained as before. This places the patient in an extremely favourable position, coinciding with the period during which, exerting himself to the utmost, he has reached his maximum working capacity, when,

too, his food allowance is also at its maximum—the most critical time of the convalescence. The allowance from the association cannot, of course, be permanent, but it is continued for a period varying according to the case, until it is quite clear that the man has got used to working full time and has become re-accustomed to his former surroundings. Then in a succession of 21-day periods the allowance is reduced by 2*s.* 6*d.*, so that at the end of another nine weeks the man ceases to receive anything from the After-Care Association, and has returned to a position of absolute independence.

It is our experience that on these terms and under these conditions the man readily resumes his former work. He is spared the plunge straight into work-a-day conditions which he would have to have made if the association had not assisted him, and this at the most critical period of his treatment. The way is made easy for him by dividing his ascent to health into practicable stages.

So far, we have described the progress of the most suitable case—the case which can be dealt with easily in this scheme. Of these cases a considerable number have passed through the hands of the association in this particular way; in every case the results have amply justified the energy, time, and money expended on them. Comparing these cases with those allowed to return home without receiving this assistance from the association, there seems to be a marked shortening of the time elapsing between the patient's return home from the sanatorium and his resumption of full work. There is always, we find, a tremendous inclination on the part of the patient who has completed his treatment at one of certain sanatoria to become so wrapped up in himself, and to be so impressed with the gravity of his ailment and with the importance of not exerting himself unduly, that, clinging to his club money, he hesitates to re-enter his former occupation; he almost invariably looks for some further help, very little persuasion being necessary to induce him to accept some form of charity until, as he puts it, he gets quite strong.

This attitude can be successfully combated by carrying on the treatment at sanatoria entirely on industrial lines—that is to say, by marking out the exercise allotted to the man, as far as possible giving it to him at his own trade, and commencing it at the earliest possible opportunity. It appears to us to be a gravely mistaken policy to treat early cases of pulmonary tuberculosis by means of graduated work unless that work is one in which the patient recognises his former employment or, failing that, one which gives a practical result: only then does he realise that under the favourable conditions obtaining at a sanatorium the actual work, far from contributing to his disease, enables him to fight against it—a realisation invaluable for the patient, for having reached it he is willing to return to his home and needs little encouragement to restart his former occupation (provided always that the occupation is one of a suitable nature).

The Work of the After-Care Association.

The work of the After-Care Association may well be illustrated by concrete cases, though we are well aware that the objection may be urged that insufficient time has elapsed between the patient's discharge from a sanatorium and the point at which the case is reviewed to allow of any very definite conclusion being arrived at that permanent benefit has accrued from this treatment. This line of argument may be entirely valid, and we shall have to wait until a considerably longer time has elapsed before we can definitely state that our method has been of permanent benefit to the cases concerned. Nevertheless, we are of opinion that we have now sufficient evidence to show that unless the method which is here being advocated had been adopted many of the patients would still be in receipt of a diminishing club allowance and would not have become producing economic members of the community.

In dealing with such cases two points must be kept constantly in view: 1. The benefits which accrue to the individual patient. These benefits may be a very considerable prolongation of a working life, greater contentment of mind, and other personal considerations. 2. A definite gain to the community in the form of value of the work performed by the man and the consequent gain to the State and the Friendly Society concerned by the gradual withdrawal of the man from the list of those receiving sickness benefit.

The tuberculosis problem is, of course, not completely solved on these lines, as is imagined in some quarters, nor is it contended that the Cambridgeshire After-Care Scheme can be put forward as constituting any new specific for the cure of tuberculosis. It has been designed rather with the object of rendering a consumptive working man of economic value to the community, and so of preventing the great drain on the funds of State and private side of Friendly Societies working under the National Insurance Act, and at the same time of enabling the patient to be placed in the most favourable position for the arrest of the disease.

Fifty-two cases have been assisted on the principles laid down during the period under review—three years. Out of these 52 cases, all in the first or second stage, only one has died; the others at the time of writing are all engaged in remunerative work. Those who have been assisted during the last few months are naturally not yet on full work, but those who were assisted between two and three years ago, with one exception, are all at full work. Nearly all the cases are those of men following country pursuits, but one or two are clerks in a factory or in an office; others are men who have been assisted to change their occupations for the benefit of themselves and their families. How many will fall out in a year's time or in two years' time it is impossible to say, and for this reason we wish to be quite guarded in making any undue claims for the advantages of this scheme. In one particular, however, it seems quite clear that there has been a considerable gain. In many cases the patients would have hesitated very considerably before "coming off the club" if there had been no special inducement for them to do so. Once they are "off the club," many hesitate to go on again, especially if they can gradually increase the number of their working hours and slowly accustom or "acclimatise" themselves to the new conditions.

A very typical case is that of a worker in a skin yard. When first seen the disease was in its second stage. The man was "on his club," and was apparently content to remain there. He had been "incapacitated" for nine months, and was firmly convinced that he would never be able to work again. His wife went out charing. Having found the man a suitable occupation—driving a light cart for his firm—he was induced to work six hours a day, being given a bonus of 10*s.* a week. Since then, during the past three years, the man has continued to work with but slight and temporary breakdowns. He is still working.

A farm labourer similarly treated, after going through a sanatorium course, is still at full work (harvest work at present). He was only induced to re-start work by the offer of assistance together with the willingness of the employer to take him on for part-time work to start with.

The proof is not conclusive, the data are not sufficient, but the facts point to the conclusion that the scheme is a step in the right direction.

The Problem of Finding Suitable Work.

We have already stated, in reviewing the answers of the patients to a set of questions here given, that the crux of the whole matter seems to be the suitability of the work offered, and whether the work offered is really a concrete proposition. In a rural district such as Cambridgeshire, the finding of employment for such patients as are here described offers less difficulty, perhaps, than would be experienced in other parts of the country, especially in areas covered with crowded dwellings, large towns, mining districts, and so on. The difficulty is great even in a rural area, and will undoubtedly be greater in a county more densely populated, especially where the spread of the knowledge of the disease and of its treatment is defective.

Even in Cambridgeshire, where probably the conditions are simple and the difficulties less acute, the problem of finding work for ex-patients has by no means been solved in its entirety. It is, however, we hope, in the process of solution, the first essential having been secured—viz., *a method by which tuberculous labour may be subsidised for the time being;* for such a length of time as will secure the patient a favourable re-start at an occupation eminently suited to his condition. This principle, as has been explained, has been developed by the After-Care Association, and although the practice has been limited, the way of reform is clearly indicated.

In order to test still further the method, advantage has been taken of the very favourable opportunities which are afforded during the treatment of the tuberculous soldier, and doubtless the Ministry of Pensions had the principle of subsidising tuberculous labour in its mind when the proposals

were drafted. The proposals, however, fall short in so far that they do not provide the necessary accommodation for instruction in, and the carrying on of such labour—though once it is subsidised it can only be a matter of a few months before the provision of such accommodation will be an accomplished fact. In other words, we shall have established the chief essential for the after-care of the tuberculous soldier—that of providing him with work and subsidising his labour so that he may become a wage-earning member of the community.

Working Capacity of Ex-sanatorium Patients.

It is agreed that (according to the stage of the disease) an ex-sanatorium patient can do only from 30 to 60 per cent. of the work done by the normal individual; and since this is an ascertained and undisputed fact it is foolish to ignore it. That we have ignored it in the past is only too evident, and accounts for the story of failure which has followed most after-care efforts. *If a man is capable of doing only 60 per cent. of the work of a normal man it is only courting disaster to attempt to place him amidst his old surroundings and without assistance, in competition with the strong full blooded worker.* To send him back to such surroundings with a pint of milk a day would seem humorous if it were not so tragic. It is inadequate, unscientific, senseless.

Hitherto the essential facts of the case have been ignored, so much so, indeed, that a mass of opinion, both medical and lay, is at present on the verge of condemning the principles of sanatorium treatment. The principles are sound enough; it is the method of applying them which is at fault. The essential facts to be grasped, if we are to deal satisfactorily with this problem, is that a consumptive working man cannot equal in working capacity a full-grown healthy man, and that until a specific cure for tuberculosis has been found sanatorium treatment can do no more than retard the disease and, under favourable conditions, arrest it. If, therefore, the retarding process can by some means be indefinitely prolonged whilst the man is doing industrial work our end is gained. Such means in our present state of medical knowledge would seem to constitute the right form of treatment both for the individual concerned and from the point of view of the State.

In densely populated districts and in areas where the housing conditions are bad and the hours long the chances of retardation of the disease in the ex-sanatorium patient are reduced to nothingness, and it seems to the writers that he will be a bold man indeed who attempts to carry on after-care in such surroundings. Just as the State recognises that it must be responsible for the treatment and training of ex-soldiers who have been incapacitated by the war, so the State ought to shoulder the responsibility of these civilians who fall by the way, succumbing to tuberculosis. The stress of modern life, inadequate housing, and severe competition are responsible for the break-down of such men, and it seems that since the State has already shouldered so much responsibility it should go a step farther and make sure that the opportunity be given to these men to do the work of which they are capable, though it be but a percentage of a full day's work.

THE BOURN COLONY.

This thought, together with others, made the writers attempt in a small way to estimate the amount of work of which sanatorium patients are capable, and to ascertain whether under suitable conditions various forms of labour could not be carried out without the elaboration of sanatorium surroundings; hence the foundation of the Bourn Colony, where it has been a matter not for surprise only but for congratulation to see what can be accomplished with a minimum expenditure of money, though not of time and energy.

The Bourn Colony was started by one of us (P. C. V.-J.) a little over two years ago. The "colony" consisted at that time of an old country house standing in its own grounds of two acres. It had long been empty, the garden was unrecognisable, and other parts of the ground resembled a wilderness. On this site a few shelters were erected and the patients (early cases with and without T.B. in the sputum) installed. In the house resided a matron (a trained nurse) and a nurse, together with a cook.

The number of shelters was gradually increased and the work of planning out the colony was begun. Paths had to be made and the land drained; a large pond in the middle of the grounds had also to be drained and filled up. To accomplish this a trench 6 feet deep and 40 yards long was dug by the patients. As soon as this necessary work had been done our attention was turned to the further fitting up of the colony for the reception of more patients. Since each patient lives in a shelter, the matter was easy of solution, and it was only necessary to erect more shelters to make the place available for the reception of the larger number of patients. We were, however, without a trained carpenter, but one or two of our patients being rather more skilled with their hands than the others volunteered to design and make a shelter which would serve as a pattern.

Our colony at that time resembled somewhat closely the island on which the "Admirable Crichton" of the play landed after the shipwreck. In such a community one patient will always take the lead, and if it is fortunate in having the right type of man the work will go on. This, at any rate, was what happened at the Bourn Colony in its early days. We were fortunate, also, in having a discharged soldier who had been a market gardener, and in a very short time, as he was able to enlist the sympathies of some of the patients, the garden grew apace.

The beginning of the colony well illustrates the principles on which it is run. Patients are encouraged to follow an occupation as near as possible to that on which they were formerly engaged, with the consequence that the colony has developed on simple lines merely with the aid of the patients themselves. After some time a carpenter patient arrived, and, guided by his experience, shelters have been re-designed and have been made at a greatly accelerated pace; now practically half the shelters in the colony are of home construction, and the patients, seeing the efforts of their labours amply rewarded by the installation of another patient who has benefited by open-air treatment in a hut made by themselves, are encouraged to push on with other shelters. As we have been able to extend the scheme on the recently acquired Papworth Hall estate, a still greater number of patients can be accommodated, and the work at Bourn is growing, the construction of shelters which will be worthy of the newer institution going on rapidly.

Practically all the patients now at Bourn are discharged soldiers; on admission they all had tubercle bacilli in the sputum, but, with the work as planned out, they are steadily improving, and—a very important matter—are taking a keen interest in their surroundings, a great factor in adding to the efficiency of the work and the benefit obtained.

The original capital laid out in the acquisition of the house and the rent of the grounds, in the building of a small sanitary block, in the purchase of extra bedsteads and bedding for the new shelters, in replacements, &c., was the moderate sum of £500, and up to date this has enabled 88 patients to be treated on the above lines. After two years' work 90 per cent. of the patients discharged from the colony are now at full work, and we think it can be claimed that the treatment is not only economical but that the results are in no way inferior to those obtained in sanatoria enormously more costly to build and much more expensive to equip and administer.

The colony being, of course, used as a training ground in connexion with the After-Care Association, a number of patients have been admitted who have had preliminary treatment in other existing sanatoria. Those who have returned to the county and have not been able to work have been taken in at the colony and there encouraged to make a new start on some suitable occupation. The latest addition to the activities of the colony is the tailor's workshop, which, again, has been erected by the patients themselves. The occupant, an ex-army man, who is a tailor by trade, is engaged in gardening work part of his time and part in tailoring in his specially designed workshop.

COMBINED SYSTEM OF INDUSTRIAL COLONY AND AFTER-CARE.

We have now no doubt that the experience gained at Bourn Colony, together with the experience of certain sanatoria which have made a feature of the introduction of trades into the sanatorium régime, will be of enormous value in indicating the way to the reorganisation of sanatorium treatment. Such experience affords promise that we have only to abandon the short sanatorium treatment and work on the lines of a prolonged stay at the less

expensive and more moderately staffed industrial sanatorium, run entirely on colony lines, to obtain the results which we have been led to expect and can now confidently anticipate.

Many local authorities at the present time hesitate to put up expensive buildings for the treatment of tuberculosis on what one might already describe "old lines." Let them be encouraged to work on the colony principle and follow their cases up by means of an after-care association.

It is the intention, in Cambridgeshire, to proceed still further along the above slightly sketched lines, and by means of a subsidy paid by the State through the Pensions Ministry or through Friendly Societies (the principle as will be seen is the same), to encourage the formation of a Garden City with organised industries in connexion with a central institution. Part of the Papworth Hall estate, which has recently been acquired for the working of the scheme, is being satisfactorily adapted; model workshops where the consumptives will in time be employed are being fitted up, and the model village to accommodate them, which already exists, will, we hope, also be acquired. It is anticipated that the maximum results will be obtained by sanatorium treatment, and that the breakdown which under present-time conditions so frequently occurs when the working man is discharged from the sanatorium may thus be prevented.

Summary of Advantages of System.

To sum up, the following advantages of the combined "colony" or industrial sanatorium and after-care system as here outlined may, with considerable confidence, be anticipated.

1. Prolongation of the period of treatment with—(*a*) more intensive, because more interesting and better graduated, treatment; (*b*) the utilisation of suitable occupations in such treatment even during the earlier stages of residence in the colony; (*c*) the continuation of training and the consolidation of the improvement already gained during the preliminary stages of treatment; (*d*) more personal supervision and immediate encouragement.

2. The utilisation to the best advantage of the funds drawn from (*a*) the National Insurance Commissioners; (*b*) the rates; (*c*) the Pensions Ministry; (*d*) Approved Societies; (*e*) voluntary subscribers.

3. The pooling of the advice and countenance of these various authorities, bodies, and individuals.

4. The preparation and encouragement of the patient to re-enter, under more favourable conditions, on the struggle for a livelihood without having to contend against the drawbacks attending overwork, overstrain, and anxiety.

5. The moral encouragement afforded to the patient by the knowledge that these favourable conditions, already tried and successful in the case of others, are available in his own special case.

6. The gain to the community of a productive member in place of a useless consumer. It may be objected that this member is producing but 50 per cent. or 60 per cent. of his full or original amount, but to this it may be answered that this 50 per cent. or 60 per cent. may represent considerably more than the full capacity of many a healthy worker.

7. The segregation and isolation of "centres" of massive infection and the bringing down to a comparatively safe dilution, of less—but still under certain conditions—dangerous quantity.

8. The education of patients in the "ritual" necessary for their own "nutrition," maintenance in, or restoration to, health and strength, and especially the knowledge of how to render themselves harmless to themselves, their families, and their friends.

9. The inculcation of a feeling of moral and physical self-respect involved in,

10. The knowledge that they are being cared for, not out of charity, but because their fellows—the State or community—recognise that they, members of this community, have fallen by the way, not as a result of their own misdoings, but because surroundings were unfavourable and conditions adverse, and that these righted they still have a chance of making a success of their life and work.

A LONG APPOINTMENT.—At the last meeting of the St. Thomas's (Devon) board of guardians a resolution was passed unanimously expressing the gratitude of the guardians to Mr. Henry Wallace Furnivall for his 40 years' devoted service as medical officer for the Woodbury District, and expressing regret at his resignation of the post.

THE VALUE AND LIMITATIONS OF SANATORIUM TREATMENT AS REGARDS THE WORKING CLASSES.[1]

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IT must be admitted that the results of sanatorium treatment of the working classes, as revealed by the after-histories of discharged patients, are at present far from satisfying. It is not that this particular class of patient fails to respond to treatment. Those drawn from a large city and its immediate neighbourhood, who form a very large majority of the total admissions to the sanatorium at Frimley, do, given reasonable initial selection, respond rapidly and well, generally are intelligent and easy to instruct, and make an attempt to carry out sanatorium principles in their subsequent life. In fact, the response to and immediate result of treatment in such cases are, in my experience, strikingly and almost uniformly good.

During the three years 1905-6-7, 292 patients, in whose sputa tubercle bacilli had been found, were discharged from the sanatorium at Frimley. Of 266 of these, who were traced to the end of the first year following that of their discharge, 65·8 per cent. were well and working, 24·4 per cent. were alive, and 9·8 per cent. were dead. Of 245 traced to the end of the second year following that of discharge, 56·8 per cent. were well and working, 21·6 per cent. were alive, and 21·6 per cent. were dead. Of 209 similarly traced to the end of the fifth year following that of discharge, 38·8 per cent. were well and at work, 14·8 per cent. were alive, and 46·6 per cent. were dead. These 292 were selected cases, carefully chosen by the physicians to the Brompton Hospital, and the great majority had undergone preliminary treatment at that institution, thus being under consecutive treatment for a very considerable period.

I propose to consider very briefly some of the chief factors responsible for such a rapid loss of working capacity in so high a proportion of cases, which factors are, in the main, well recognised, and to point out certain directions in which there seem to lie opportunities for improvement in the treatment of this class of patient.

I. *The Return to Faulty Environment.*

The great majority of these 292 individuals returned to their work in London at which they had broken down previously. The frequency and rapidity with which loss of condition and return of unfavourable symptoms follow a return to urban life are very striking. It is not easy to point to any one specific cause of this relapse. In a proportion of cases it follows immediately upon an attack of influenza or of common cold, accidents inseparable from town life. In others no such exciting cause can be traced. Its occurrence does not appear to depend to any great extent upon the presence or absence of what ordinarily constitutes "after-care."

At the time of the discharge of these 292 individuals there was little or no special provision for their after-care. Lately there has been improvement in this direction, and early in 1915 a special branch of the Almoner's department at the Brompton Hospital was instituted to deal with cases discharged from the sanatorium. A health visitor was also appointed. Homes were visited, arrangements made for the patients' return, help given where necessary, and patients were persuaded in gratifying numbers to present themselves regularly to report and to keep under the observation and treatment of hospital, dispensary, or private doctor. In many other ways useful work was done, the whole constituting a fairly complete system of "after-care."

For some years past a change to a more suitable environment has been urged upon many patients on their discharge where such a change seemed desirable. Until recently, in the absence of efficient supervision, it has been possible to accomplish this in comparatively few instances. Since the institution of the after-care department it has proved feasible in a much larger number.

[1] A contribution to a discussion at the Medical Society of London on Nov. 12th, 1917.

In order to demonstrate the beneficial result of such change of environment tables have been prepared contrasting the immediate after-histories of two groups of cases.

A. All traced instances of "apparent arrest of disease" and restored working capacity discharged in a certain year, and returning to their former occupations in and about a large city.

B. All traced instances of restored working capacity discharged in the same year and who effected a recommended change of environment.

(A) During 1915 a group of 32 cases, presenting important features in common, left the sanatorium. They all came from urban working conditions. In all tubercle bacilli were present in the sputum at the commencement of treatment; in none were they so found at its conclusion. The average number of lobes of the lungs in which any signs of disease had been noted was 1·8. They formed an excellent collective example of the "good sanatorium case," and were classified on discharge as instances of "apparent arrest" of the disease. They all returned to the homes and working conditions in which they had broken down previously. The majority of the patients were of distinctly the better working-class type. Their homes generally were clean and not obviously insanitary, sleeping arrangements satisfactory, and wages good. The work to which they returned was of very varied character, but as a whole, neither particularly arduous nor dangerous. All those still alive had been traced up to the latter half of the present year (1917). Of these 32 people, at the time of the latest reports (averaging two years and a few months from the date of discharge) 10 (31·2 per cent.) were well and at work and had kept so; 5 (15·7 per cent.) were "fairly well" and still at work; 8 (25 per cent.) were alive, but unable to work; 9 (28·1 per cent.) had died.

(B) In the same year, 1915, out of a number of cases of relatively good prognosis who were recommended to secure improved conditions 44 were able to effect a change for the better. They were not specially selected as having only slight pulmonary lesions, for in a considerable number such lesions were quite extensive. Nevertheless, they all appeared capable of doing a reasonably full day's work and to have a fair chance of maintaining working capacity in healthy surroundings. In all tubercle bacilli were present in the sputum at the commencement of treatment, in 23 they were still present on discharge, in 21 they were not so found. The average number of lobes of the lungs in which any abnormality had been noted was 2·2. All have been traced into the latter half of the present year. They form a group roughly comparable to the one analysed above. Twenty-nine effected a change of both residence and occupation, five a change of occupation only, while ten found situations at their former employment in more suitable localities. Many made the change unaided except with advice, to others help was given in the search for work or in the removal of the home, for some situations were found, and for a few courses of instruction in motor-driving, &c., were provided. Six joined the Forces. In most instances the work and surroundings which they were able to secure were far from ideal, but constituted a marked improvement on their former conditions. Of these 44 individuals, after a lapse of time averaging a few months over two years and excluding one who was accidentally killed, 35 (81·4 per cent.) have remained continuously well and at work; 6 (13·9 per cent.) are well and at work, but have had time off from work for illness and in 4 cases further institutional treatment; 1 (2·3 per cent.) is fairly well, but not at work; 1 (2·3 per cent.) has died.

The time interval is short, and these lists are admittedly imperfect, as time did not permit a thorough attempt to determine the fate of untraced cases, and most of those who are abroad have been excluded. Again, it is likely that among those who have effected a change are the majority of the more resourceful, intelligent, and financially better situated individuals. While these lists are far from being accurate statistical tables, I believe they illustrate tolerably fairly the rapid wastage on return to urban industrial life and the improved outlook under better conditions. It seems possible that the attempt to return to working-class life in cities, large numbers of discharged sanatorium patients who are, or have been recently, cases of "open" disease, may have to be abandoned as entailing great waste of life, labour, and money.

Obvious alternatives are: (*a*) Greatly prolonged residence in sanatoria; (*b*) a long or short period of treatment, respectively combined with or followed by training and subsequent start in suitable work in a proper environment; (*c*) the establishment of rural industrial centres, in which patients could work at their accustomed, or some closely allied branch of industry.

II. *The Lack of Provision for Prolonged Treatment.*

The working-man, who is obliged to return to full work immediately upon his discharge, requires longer sanatorium treatment than any other class. In all but the really incipient case two or three months is a quite inadequate period. It is reasonable to urge that in those with "open" disease, however limited in extent, some months at least should be spent under sanatorium conditions after the stage termed "arrest" has been reached. This at present is impossible for financial reasons. With the exception of a few more fortunate individuals, the married man is obliged to return to work far too soon, and prolonged treatment can be given only to the unmarried, usually young, man without responsibilities, who constitutes by no means the most promising material.

As to the length of time necessary to render those with health seriously undermined by extensive disease fit to resume ordinary working-class life, I have little experience. On the staff of the sanatorium at Frimley are a number of individuals who were originally of this type. They have done good work continuously for several years, in some instances for so long as 11; but I think he would be a bold man who would counsel their return to other environment. I know that the annual holiday, when they revisit their homes for a short time, is a very critical period.

With some form of permanent colony for advanced cases in suitable surroundings and under constant medical supervision, there seems little doubt that their lives would be prolonged, with a varying degree of capacity for useful work, and that in a certain number more substantial results might be obtained.

III. *Lack of Provision for Re-treatment.*

A considerable number of discharged cases require re-treatment sooner or later. It may be that, following a period of steady work and good health, loss of condition or recrudescence of symptoms points to the probability of relapse. Prompt cessation of work and removal to a healthy environment are called for. Delay may entail loss of employment and serious illness. Improvement is most rapid and satisfactory under sanatorium supervision. Unfortunately, admission to charitable or other public sanatoria involves, as a rule, a long period of waiting. During the last two years the use of occasional beds at the sanatorium at Frimley has been sanctioned for this purpose. The cases have been selected in the after-care department at the hospital, preference being given to those in whom the prognosis at the time of discharge seemed relatively good. These few beds have done useful work, for, if taken in time, the readmitted case responds rapidly. I believe that serious relapse may often be averted by this procedure and that an extension of such facilities would be a true economy.

IV. *The Admission of Cases Unsuitable on Grounds other than Medical.*

Among the admissions to a public sanatorium are a number of individuals whose treatment is foredoomed to failure on account of their habits, lack of will power or intelligence. Though they may be excellent subjects upon other grounds of selection, and though they may make a good immediate response to treatment, they relapse quickly upon discharge.

Such persons form an appreciable percentage of the total admissions. The difficulty is more likely to be encountered where treatment is gratuitous or given from public funds. It is not easy to exclude such people, since frequently the defect is apparent only after a period of observation, and it is probable that cases of this nature will always influence statistics adversely.

V. *The Need for Earlier Diagnosis.*

The working man's only capital is, as a rule, his capacity to perform continuously a full day's work. Once his working capacity is permanently impaired, however slightly, his whole outlook is jeopardised and provision for his future rendered more complicated and costly. In his case early diagnosis is all-important. At present a considerable number of individuals reach sanatoria for the first time permanently crippled by extensive disease. In the absence of elaborate provision for "after-care," residence for a few months at a sanatorium does little or no permanent good to the great majority, their after-histories are doleful reading, and it is doubtful if the expenditure of large sums of money for this purpose is justifiable on any grounds. Certainly, in the case of many, such money could be laid out infinitely more wisely in other directions for their benefit.

In a very disquieting proportion of these cases there is a previous history of initial symptoms disregarded or made light of. Since treatment of advanced active disease is so hopeless and since in even selected cases of manifest disease present methods call for elaborate and costly amplification, recognition of initial symptoms and supervision at the really incipient stage are all-important for the working man. It is at this stage he needs access to the expert physician for diagnosis and advice, warning of future possibilities, regular and skilled medical supervision over a prolonged

period, education, removal from obviously unsuitable environment, and all that constitutes "after-care." It may not be essential to send all patients away for treatment at this stage, but wherever initial symptoms are accompanied or followed by impairment of general health a period of residence in a sanatorium is probably the most efficient means of restoring condition and imparting valuable knowledge. These incipient cases retain their working capacity for very long periods after discharge from sanatoria, in whose records they constitute a considerable proportion of the cases classed together as "tubercle bacilli not found," and whose after-histories are so good. Other methods of treatment can show a high percentage of successful records in this type.

Where similar results follow such widely varying procedures as residence in sanatoria, regular attendance to receive medicine, or the inoculation of various kinds and doses of tuberculin, it seems probable that these results must be ascribed to the factors common to all such forms of treatment—namely, the warning, supervision, and greater or less degree of education and after-care which the patient receives. Recognised and supervised the incipient case does well, unrecognised and assured that nothing is amiss a considerable number certainly do very badly.

In touching upon these causes of "sanatorium wastage" I have emphasised, necessarily, the gloomy aspect of the problem. Nevertheless, I am convinced that given certain essentials—viz., early diagnosis, reasonable treatment, and a chance to spend his future working life in a proper environment—certain attributes of this class of patient make him the most profitable subject for sanatorium treatment.

THE CONDITIONS OF GROWTH OF *BACILLUS WELCHII* IN THE PRESENCE OF OXYGEN.

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Bacillus welchii is classed among the strict anaerobes, and in working with this organism much care is usually taken to make the conditions as anaerobic as possible for its growth. Certain statements in the literature have for a long time made us suspicious of this classification, and in the following notes are presented some observations in this direction.

The matter of the presence of air was taken up many years ago by Tarozzi, and Ori and Wroszek, who claimed that the addition of small pieces of various substances, animal and vegetable, was sufficient to induce the organism to grow in the presence of air. A certain amount of discussion followed as to whether it was necessary that the material should be living or dead when introduced into the culture medium. Rosenthal claimed that these organisms could be grown in the presence of air provided that they had been adapted to this mode of growth by preliminary treatment.

Recently Wright has repeated the experiments of the previous investigators and has confirmed them. On these he has based certain theories regarding treatment. The idea is advanced of "niduses of lowered bacteriotropic pressure."

What appears to have escaped the observation of these investigators is the fact that given a simple culture medium of suitable character, the *Bacillus perfringens* grows perfectly well under those conditions which bacteriologists speak of as aerobic, *provided the medium is freshly sterilised*. This can be done without the addition of any adventitious substance such as potato, liver, apple, or platinum black. The original difficulty in getting the organism to grow under aerobic conditions was probably due to the relative unsuitability of the culture media which were employed.

The strains of *B. perfringens* which have been used in the present work are those which have been used by us in other series of investigations. They have retained all the cultural characteristics of the organism, and, what is possibly more important, their chemical behaviour has remained absolutely constant. We have every reason to believe that they represent quite normal strains of this organism. As will be seen, we have controlled these results with other strains, among them one from the Institut Pasteur, Paris, with identical results.

The culture medium used was a peptone solution made by the digestion of casein, to which glucose was added, and adjusted to a definite hydrogen-ion concentration (acidity) with the hydrogen electrode. Experiments which we have recently made, and which are reported in the *Journal of Pathology and Bacteriology*, show the important influence of this single factor—the reaction of the medium—on the growth of these bacteria.

The content of "peptone" was about 2 per cent. The amount of culture medium used was 10 c.c., contained in ordinary bacteriological test-tubes, 5/8 × 6 inches. The inoculation was made with three drops of a 15-hour old culture on milk, which was seeded from a 6-hour old culture on cooked meat. The inoculation was made with a fine capillary pipette, so that the amount of fluid introduced was, roughly, 0·1 c.c.

Preliminary Experiment.

A preliminary experiment gave the following results:—

Tubes of glucose peptone containing 10 c.c. of medium and provided with Durham tubes, were inoculated and incubated at 37° C. for 24 hours. All these tubes showed a vigorous fermentation. The Durham tubes were filled with gas.

As the Durham tubes introduced a complication, by providing that a portion of the medium should be more or less sheltered from direct contact with the air, a second set of tubes was used.

These were the ordinary bacteriological test-tubes described above, containing 2 per cent. glucose peptone. The area of fluid exposed to the air was about 2 square centimetres. A similar set contained Durham tubes. A third set was so arranged that they could be incubated in a sloping position and so expose a larger surface to the air. A fourth set consisted of quite large tubes, 1 in. in diameter, containing the same amount of culture fluid. These were also grown in a sloping position.

In the small tubes containing Durham tubes the bacteria might be expected to find conditions which were more or less anaerobic. In the small tubes incubated in the upright position there would be less chance of the bacteria avoiding contact with the air. The chances for contact with air would be increased with the small and large tubes in the sloping position.

Four types of media were used in these experiments: (1) 2 per cent. glucose peptone; (2) 2 per cent. lactose peptone; (3) 2 per cent. lævulose peptone; and (4) 2 per cent. maltose peptone.

Three different specimens of *Bacillus perfringens* were used. The first set was inoculated with *B. perfringens*, K 95, 16 hours old, on milk; the second set with *B. perfringens*, K 94, 16 hours old, on milk; and the third set with *B. perfringens*, K 90, 49 hours old, on cooked meat.

The bacillus fermented the different sugars equally well, so far as could be judged by the gas production.

TABLE I.

	Total number of tubes	Number fermented.	Number unfermented.	Per cent. fermented.
With Durham tubes	11	11	0	100
Without ,, ,, ...	12	8	4	66
Small slopes	7	3	4	43
Large ,, ...	3	0	3	0

From these experiments (see Table I.) it is clear that *B. perfringens* is not absolutely anaerobic. It prefers anaerobic conditions, but can develop when air is present. The greater the amount of air that has access to it the less favourable are the conditions of growth.

Further Experiments.

In order to test further the ability of *B. perfringens* to grow under aerobic conditions another set of experiments was arranged.

Tubes were prepared containing 2 per cent. glucose peptone at a favourable reaction for growth. The reaction was $P_H = 6·6$. Each tube contained 10 c.c. of medium.

There were three sets of tubes, each set being inoculated with a different culture of the bacillus. Each set consisted of:—

1. A small tube containing a Durham tube.
2. A small tube without a Durham tube.
3. A large (1 inch) tube containing a Durham tube.
4. A large (1 inch) tube without a Durham tube.
5. A large (1 inch) tube, incubated in a sloping position.

6. A large (1 inch) tube, incubated in a sloping position and shaken frequently so as to change the air in contact with the surface.

Series A was inoculated with K 97, Series B with K 98, and Series C with K 98 (in each case 24 hours old on cooked meat). The tubes were examined three days after inoculation.

TABLE II.

No. of tube.	Series A.	Series B.	Series C.	No. of tubes fermented.
1	+	+	+	3 : 3
2	+	+	+	3 : 3
3	+	+	+	3 : 3
4	–	–	–	0 : 3
5	–	–	–	0 : 3
6	–	–	–	0 : 3

+ Indicates growth; – indicates no growth.

These experiments show that *B. welchii* prefers anaerobic conditions to those where air is present. When, however, the conditions are nominally aerobic but the organism can find a certain amount of shelter from oxygen, either by reason of the depth of the layer of liquid or other cause, development will take place. Once development has begun the dissolved oxygen of the liquid is swept away in the evolved hydrogen and carbon dioxide produced by the fermentation.

In order to ascertain whether *B. perfringens* could develop in a steady stream of air, the following experiment was devised.

A litre flask was taken and provided with a three-holed rubber stopper. Through one hole passed a tube on the outer end of which was a cotton-wool air filter. The end inside the flask was drawn out into a fine capillary. Through the second hole passed the inoculation tube, and through the third hole passed the air-delivery tube. 500 c.c. of the glucose peptone were placed in the flask, which was sterilised in the ordinary way. After sterilisation all joints were made tight with paraffin wax. The delivery tube was closed off with a sterile-air filter, and the contents of the flask inoculated with a young culture of *B. perfringens*. After inoculation the flask was incubated in a water bath at 37° C. The air filter attached to the delivery tube was then connected to an aspirator by which sterile air could be passed through the medium by way of the capillary. The air-supply was so regulated that about 300 c.c. of air passed through the medium per hour.

After 24 hours the medium was examined to ascertain whether fermentation had taken place. The liquid was only slightly clouded. The reaction of the liquid, as determined by the hydrogen electrode, was very slightly more acid. Analysis of the outgoing air showed it to contain more carbon dioxide than ordinary air. The percentage of oxygen was somewhat low, indicating the presence of a gas such as hydrogen. The liquid had fermented, although the fermentation was of a very feeble nature.

Data.—500 c.c. of glucose peptone, sterilised at 110° C. for 45 minutes. Incubated at 37° C.

Air drawn through at the rate of 300 c.c. per hour.

Absolute reaction before inoculation, $P_H = 6{\cdot}7$.

Absolute reaction after fermentation, $P_H = 6{\cdot}4$.

A control experiment made with the same apparatus, using 750 c.c. of nutrient medium, gave practically the same result. The amount of carbon dioxide formed during the 24 hours was about 50 c.c.

A glucose peptone experiment done under strictly anaerobic conditions will yield about 750 c.c. of gas per litre, and the fermented medium will have a reaction of about $P_H = 4{\cdot}5$.

Experiments with Other Strains.

In order to control the above results obtained with a single strain of *B. perfringens* which we had subjected to frequent transfers, we investigated five different strains of *B. perfringens* to ascertain if their behaviour towards air was the same. These strains were taken from cultures given us by Captain H. Henry, R.A.M.C., and included a strain marked "Pasteur," furnished by the Institut Pasteur of Paris.

The method of testing them was to prepare sets of tubes containing 2 per cent. glucose peptone water. The tubes were so selected that the bacteria, after inoculation, were submitted to conditions becoming less and less anaerobic. The different types of tubes used were:—

1. Small tube; with Durham tube; surface exposed to air, 2 sq. cm.

2. Small tube; no Durham tube; surface exposed to air, 2 sq. cm.

3. Large tube; with Durham tube; surface exposed to air, 7 sq. cm.

4. Large tube; no Durham tube; surface exposed to air, 7 sq. cm.

5. Large tube; incubated in a sloping position.

Five sets of such tubes were prepared, and each set was inoculated with three drops of one of the five cultures, three hours after these arrived in the laboratory. They were then incubated for 24 hours, after which time examination was made for growth.

Series A was inoculated with strain labelled "King, 10/5"; Series B with strain labelled "Pasteur, 10/5"; Series C with strain labelled "Benson, 10/5"; Series D with strain labelled "Bryant, 10/5"; Series E with strain labelled "Wills, 10/5." The results are given in Table III.

TABLE III.

Tube number.	Series.					No. of tubes fermented.
	A	B	C	D	E	
1. Small tube, with Durham.	+	+	+	+	+	5 : 5
2. Small tube, without Durham.	+	+	+	+	+	5 : 5
3. Large tube, with Durham.	+	+	+	+	+	5 : 5
4. Large tube, without Durham.	+	–	+	+	+	4 : 5
5. Large tube, grown sloped.	–	–	–	–	?	1 ? : 5

+ Indicates growth; — indicates no growth.

It is seen from the above that the condition favouring growth is protection from air and a consequent low concentration of oxygen in the nutrient media. There is no essential difference in the behaviour of these organisms from the original ones with which we have worked. The strain which corresponds in every particular to our own is that of the Pasteur Institute.

It would appear, therefore, that with a medium favourable for growth the development of the organism is determined by a suitably low concentration of oxygen.

Remarks.

The solubility of oxygen in water is such that 100 c.c. of water saturated with oxygen gas dissolve about 2·5 c.c. at 37° C. (Fox). At 100° C. the solubility is decreased, so that only 1·7 c.c are in solution. With air, which has a partial pressure of 20 per cent. of oxygen, only 0·5 c.c. is in solution, while at 100° C. that amount is probably about 0·37 c.c. This is not taking into account any decrease of solubility due to salts or soluble nitrogen compounds in the medium.

The situation, therefore, is this: that during sterilisation less than 0·37 c.c. of oxygen per 100 c.c. has been left in the medium. As the surface of liquid exposed to the air is small, and as convection currents of air and liquid are slight, the amount of oxygen taken up by the liquid from the air is very small. Hence the concentration of oxygen in the lower layers of the tubes is such that it does not interfere with the growth of *B. welchii*. As growth proceeds and gas is evolved, oxygen is driven out of the upper layers, so that finally growth takes place in all parts of the tube.

That a higher concentration of oxygen than that remaining after sterilisation inhibits growth is shown by a simple experiment.

If we saturate the medium with oxygen before inoculation no growth should take place. In order to test this, tubes were prepared of the same diameter containing the same medium. Under aseptic conditions oxygen was bubbled through the sterile medium. The oxygenated and the control tubes were inoculated at the same time. The oxygen tubes produced no growth, whilst in the untreated tubes there was a vigorous growth.

Wright makes the statement that potato bouillon gives a much less vigorous growth when stale than when freshly prepared. The explanation for this is, in our opinion, that the "stale" tubes have had time to absorb sufficient oxygen from the air to inhibit growth.

It would appear, therefore, that with a medium favourable for growth the development of the organism is determined by a suitably low concentration of oxygen.

It is possible to test the conception of a region of diminished bacteriotropic pressure by doing away with this region. For this purpose we take the same medium, which

under certain conditions of oxygen tension does not grow the bacillus of Welch, and under lower oxygen tension produces a vigorous growth. This medium is inoculated, and during incubation a constant stream of nitrogen, containing 1 per cent. of oxygen, is bubbled through. The bubbling of a similar current of air containing 20 per cent. of oxygen inhibited growth. In the nitrogen tube a very vigorous growth takes place. Although we have prevented any segregation of bacteria, this has in no way inhibited growth, although a slight increase in oxygen tension does so.

Wright states that one

"must abandon the traditionary view that the growth of anaerobes pivots on the presence or absence of oxygen ..... and that the therapeutic principle of combating anaerobes by combating anaerobic conditions cannot be regarded in any sense as adequate."

This is a paradoxical statement which at once arrests and holds the attention, but the practical fact to be borne in mind is that the anaerobe is at once inhibited in its growth by the increase of oxygen tension above a very low level, and that its so-called aerobic growth depends on the establishment of conditions which maintain that low tension.

In connexion with the conditions which are usually associated with anaerobic technique it would appear that bacteriologists have been deluded for a long time into thinking that by covering a culture medium with a layer of paraffin or lanoline the aqueous layer is protected from the gases of the atmosphere. Vernon, as quoted by Bayliss in his "Principles of General Physiology," found that oxygen was 4·5 times more soluble in fats and oils than in water. Bayliss directs attention to the futility of attempting to protect aqueous solutions from the gases of the atmosphere by layers of oil, as is done in Hesse's method. The anaerobic conditions desired can be just as well obtained by employing *high narrow* tubes of freshly sterilised media.

We have made a certain number of experiments which confirm Bayliss's statement in every particular. Sloped tubes covered with paraffin do not grow the bacillus any better than do similar tubes unprotected by the fatty layer. If the paraffin layer is of any real value, it probably plays its part in diminishing convection currents in the aqueous layer.

Summary.

With a properly prepared culture medium, *B. welchii* will grow freely in open narrow tubes. The addition of any solid matter is not necessary to produce this apparently aerobic growth.

No segregation of organisms is necessary, for the bacillus grows vigorously when nitrogen containing 1 per cent. of oxygen is bubbled continuously through the tubes, but the organism is very sensitive to, and its growth is inhibited by higher proportions of, oxygen. For this reason the so-called aerobic growth is best obtained in narrow tubes of freshly sterilised fluid from which the air has been partly expelled by the heat of sterilisation.

TREATMENT OF WOUNDS BY A SOLUTION OF SOAP IN THE CASUALTY CLEARING STATION.

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A SHORT time ago Colonel Cuthbert Wallace, A.M.S., brought to our notice that some French surgeons were using soap solutions in the treatment of wounds, and suggested that we should try this method.

During the last few months we have used this dressing on 368 cases. During the same period we have treated similar cases with other antiseptics, including eusol, hydrogen peroxide, and B.I.P.P., with the result that we are using more soap, and less of the other antiseptics.

A sample of common yellow soap was analysed and found to contain per cent.: Water, 24·6; fatty acids, 63·0; combined alkali, 4·6; free alkali, nil; impurities, 7·8. This was considered suitable, and it was found possible to make a 2½ per cent. solution of it.

The first cases tried were small open muscle wounds in which there was no gas gangrene. After being opened up, and metal and cloth removed, the wounds were dressed with sterile gauze soaked in this solution. The dressings were left undisturbed for two, three, or four days, provided there was no rise in temperature. At the first dressing the most striking features were less pain, the unusually clean appearance of the wound, absence of pus, and the redness of the whole of the tissues—the muscle in particular.

Encouraged by the success in regard to small wounds, we tried the same treatment in larger and deeper wounds, using Carrel's tubes in the ordinary way. Here we found a difficulty with the common soap solution; it was found to be too gelatinous to flow at all well down the tubes. A 2½ per cent. solution of the B.P. soft green soap was then tried, and found to be quite satisfactory.

The results continued to be most encouraging, and compound fractures of the bones of the hands and feet, also the long bones, including the femur, were so treated successfully. Cases of penetrating wounds of the knee-joint were treated by this method, the joints being irrigated and the capsule and external wounds closed. The cases did very well.

In cases of gas gangrene the results were usually good, but in one case (buttock) a gelatinous film or glaze was formed over the affected muscles, and the treatment had to be discontinued in favour of hydrogen peroxide.

In the case where a man had similar wounds of both calves the soap solution with Carrel's tubes was tried on one side, and another antiseptic, also with Carrel's tubes, on the other. Both wounds did well, but the side treated with soap was not dressed as frequently as the other side, and when the patient went to the base his soap-dressed wound looked more like a granulating wound, and more like one that it would be safe to close than the other.

The points claimed for the soap solution dressings are that they clean up a wound quickly, the dressings are much less painful than ordinary dressings, there is a saving of labour as the dressings need only be changed every three or four days, the solution is easily procured, easily made, and cheap.

Soap Dressings.

Superficial wounds	73	Joints	30
Uncomplicated severe wounds involving muscle	160	Amputations	14
Compound fractures—		Vessels	17
Fractures	83	Nerves	6
Partial fractures	22		

Notes of Cases.

CASE 1.—Gunshot wound of left arm, compound comminuted fracture of humerus. Date of wound, July 1st, 1917. Re-dressed eusol, dressing requiring surgical treatment. Injection of antitetanic serum, first, 750 units, on the 1st. Morphia gr. ½ 12 o'clock same day. Relg. C.E. At 3 P.M., pre-operation hypodermic injection of atropine gr. 1/100, operation by Captain Dixon; anæsthetic, closed ether, Captain Lloyd. A large portion of the biceps and triceps muscles was excised. A large piece of isolated bone was removed as well as dirt and khaki cloth. Six Carrel tubes were inserted; soap dressing; Thomas splint. The temperature rose to 102·8° F. on the evening of the second day, was not above 100° after the third day, and fell to normal by the seventh day.

CASE 2.—Date of wound, June 28th, 1917. Compound comminuted fracture of left humerus. 29th: Antitetanic serum, 500 units; morphia gr. 1/4 and atropine gr. 1/100 at 2.30 A.M. Operation by Captain Dixon at 3.30 A.M. Anæsthetic, closed ether, Captain Lloyd. Loose bone removed; hæmorrhage arrested; Thomas splint; soap dressing: three Carrel tubes. The temperature slightly subnormal after operation, gradually rose to 102·8° F. by the 30th, thereafter ranging from 102° to just above normal until July 8th. On the latter date it was 100·4° in the evening.

CASE 3.—Gunshot wound of left leg; compound comminuted fracture of tibia and fibula. Operation on June 20th, 1917. Wound opened up. Three pieces of shrapnel removed, also a piece of isolated bone. Wound swabbed out with soap solution and sutured. Soap solution. On the 20th the temperature was 100·6° F. After this it ranged between 100·4° and normal, being 100° on the 27th and normal on the 28th.

CASE 4.—Multiple shell wounds; compound comminuted fracture femur; under care of Captain Bates. Patient admitted at 1.30 P.M. on —— 28th; temperature 100°. Morphine 1/4 gr. hypodermically. Operation; Carrel-Dakin tubes, soap solution. On the 29th the temperature rose to 101·8° and on the 30th to 103·6°; oleum ricini given. Temperature normal on morning of 31st, rising to 102·6° in evening. Wound dressed. From —— 1st to 4th temperature swinging from 102·2° to 100°. On 4th wound dressed. On the 5th temperature lower; urine tested and found normal. On the 7th wound dressed; antitetanic serum 500 units, temperature 100·8°. Then up to the 18th the range was between 100° and subnormal; and on the 11th patient taken to theatre at 6 P.M. Morph. tart.

CASE 5.—Compound comminuted fracture of right femur; secondary closure; soap solution; under the care of Captain Bates. The temperature on May 24th was subnormal; 25th–29th, from 101·4° to 99°; May 30th–June 12th, 99·8° to 97·4°; June 13th, 100·4°; 14th–25th, 99° to 96·8°; 26th–28th, 99·4° to 97°.

PROCIDENTIA RECTI AND ITS TREATMENT.

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UNDER the title of prolapse of the rectum are included conditions differing widely pathologically and clinically. On the one hand, there is the condition where the loose mucous membrane is extruded as a ring generally only when there is an action of the bowel; this condition is usually caused by the straining of chronic constipation, and is frequently associated with internal hæmorrhoids. On the other hand, and it is of this condition that I wish to speak, the whole rectum is thrust completely outside the anus.

Description of Condition.

The protrusion varies from 4 to 7 or more inches in length and is about 2½ to 3 inches in diameter at its base; one of the most striking features is the remarkable degree of dilatation of the anus, the external sphincter being completely paralysed, so that if the mass is reduced the anus remains in a very patulous condition. The mass presents the transverse folds of the mucous membrane, with the opening of the bowel at its apex. The mucous membrane may be normal in appearance, or inflamed and ulcerated from friction if it is constantly down; the patient's state is then pitiable in the extreme, there is a profuse discharge of mucus with tenesmus and the frequent passage of a small amount of fæcal matter.

The manner in which the bowel is extruded through the patulous anus is of importance as indicating the nature of the morbid process; it will be noticed on asking the patient to strain that it is the lowest part of the bowel that comes down first, whereas if the condition were due to an intussusception or invagination at a higher level, the lowest part of the mucous membrane would be the last to come outside, and then only in extreme cases.

Although procidentia is met with not infrequently in weakly children with chronic diarrhœa, it is by no means the formidable affair that it is in the adult, and with few exceptions is readily cured. I shall refer later to the treatment of these obstinate cases in children.

In all the cases that have come under my observation the patients have been women, otherwise healthy, between the age of 35 and 50 years (except one aged 27), and in most a similar history was obtained—"that the condition had existed for years," "as long as I can remember," or "since childhood."

Causation.

A great deal has been written on the causes of procidentia recti and procidentia uteri. That the determining factors are not the same I think there can be no doubt, for whereas the latter condition in its various degrees is extremely common, the former is a rare condition. I have only met with 7 cases in the course of more than 18 years at a women's hospital. Nor do we find the two conditions usually associated. I have, however, placed on record the remarkable case of a young woman of 27 in whom both conditions existed in a marked degree, and Lynch recorded a similar case in a woman of 71 years[1]; doubtless similar cases could be found in aged patients in those storehouses of pathological curios, the Poor-law infirmaries.

Further, the trouble is not limited to those who have borne children. Two of the cases recorded in this paper had not had children. That complete rupture of the perineum is not sufficient to produce procidentia of the rectum is also evident. I have seen patients in whom a complete rupture of the perineum had existed for years, and although the mucous membrane of the rectum was extensively exposed there was no falling of the rectum.

The essential condition for the occurrence of procidentia in the absence of any condition which drags or presses the bowel down appears to be undue mobility of the rectum either as a congenital defect or from stretching of the supporting structures. I recently performed hysterectomy (Case 5) for menorrhagia due to a fibroid, when I found that the mesentery of the pelvic colon and sigmoid were of unusual length; that of the former being fully 4 inches long at the bottom of Douglas's pouch, and as not more than 5 inches of the prolapsed rectum had been removed there was no doubt as to its unusual length, which I regard as a congenital abnormality.

The history, as I have already pointed out, is suggestive that in most of the cases the trouble had existed in childhood, and in one case it was definitely so stated; so that I am inclined to regard these cases as instances of the condition in childhood persisting into adult life, and consider that they are brought about by overstretching of the supporting structures of the rectum in early life.

Treatment.

I have operated on quite a number of cases in children in which, in spite of careful treatment extended over a long period, the bowel continued to come down. These inveterate cases are best treated by drawing down the prolapse to the fullest extent and excising a wide ellipse of the mucous membrane extending from the anal margin to the apex of the prolapse and suturing the edges with catgut sutures, which are embedded in the wall of the rectum, so that as they are tied the rectal wall is pleated; the procidentia is then pushed back and the bowels are kept confined for a few days, with precautions against straining when they are allowed to act. This operation, which is easily performed and entirely devoid of risk, is in my experience uniformly successful.

Many operative procedures have been practised for the cure of procidentia in the adult, and from their number and variation, apart from definite evidence of failure, it is suggestive that none of them are very reliable in effecting a cure. It is, perhaps, only necessary to mention, in order to condemn such methods as scoring the mucous membrane with the cautery or with a cauterising acid, these methods are in no way curative and only cause additional suffering.

Various plastic methods have also been devised. By those who regard the condition as a hernia from the pouch of Douglas the method of inserting rows of purse-string sutures in the peritoneum of the pouch of Douglas (through an abdominal incision), so that when they are tied the pouch is obliterated, is utilised. I have no experience of the operation; but if the view that I have advanced that the trouble is due to abnormal mobility of the rectum is correct, it would appear that an operation of this nature would not suffice to prevent the bowel from slipping down.

Other surgeons, by a transverse incision between the anus and the coccyx, have exposed the posterior wall of the rectum and have inserted a series of sutures into it; the ends, after reduction of the bowel, are passed through the skin on each side of the sacrum, and are tied over a pad of gauze in this position.

Ball, after opening the abdomen, drew up the prolapsed rectum until it was taut; an incision was made in the peritoneum of the left iliac region and the bowel sutured to the fascia and muscle, the peritoneum being stitched to the bowel. I have adopted this method on one occasion, in the case of the young woman referred to, in whom there existed complete procidentia recti et uteri, the latter being at the same time fixed by ventrifixation; in this case the result was satistory, until after a second parturition, subsequent to the operation, when the uterus began to come down again, and there was also a slight tendency to prolapse of the bowel again. Tuttle performed a similar operation, but attached the sigmoid to the anterior abdominal wall.

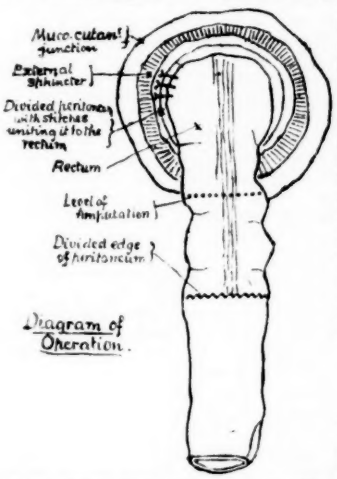
It is, I believe, generally admitted that all these methods at times fail to effect a permanent cure, just as similar operations on the uterus are by no means uniformly satisfactory; we have, however, at hand another method which, I believe, is invariably successful—i.e., excision of the whole mass with suture of the bowel to the skin.

I have now performed this operation on six occasions, details of which are given below, the earliest as long ago as 12 years, and I have been able to keep some of the patients under observation and to be able to judge how satisfactory are the remote results; not only is the prolapse permanently cured, but what is even more important is that the overstretched sphincter gradually recovers its power, although a considerable interval may elapse before this is complete.

That the operation is of a rather formidable nature must be conceded, and it may be that this cause together with the risk of sepsis have deterred surgeons from largely practising it. It is surprising, however, how slight the

[1] New York Medical Journal, 1909.

disturbance is, the patient convalescing as rapidly as after a Whitehead's operation for piles. The danger of sepsis has also been overrated; in the six cases that I have operated upon four healed per primam: in one there was a little suppuration, and a small abscess discharged at the posterior anal margin, but very little delay was occasioned, as the wound was healed in three weeks. In only one case was there any real trouble from this cause, in which an abscess formed in the recto-vaginal septum and discharged into the bowel; in this case suppuration continued for some months and eventually necessitated a further operation for the cure of what was practically a blind internal fistula.



Three sutures only are shown uniting the peritoneum to the rectal wall. A continuous suture is usually employed.

Description of Operation.

In performing the operation it is important to be expeditious, particularly in the early stages, as bleeding is rather copious. An incision is made completely round the bowel at its junction with the skin, as in Whitehead's operation. The mucous membrane is dissected up and the stretched sphincter is defined and separated from the mass from above down, the muscle fibres being carefully preserved. Having secured the many bleeding points, the incision, at a distance of 1 inch from the skin, is deepened through the wall of the bowel till the peritoneum is reached and opened transversely. Forceps are applied to the anterior edge of the peritoneum and a piece of gauze is inserted into the opening to prevent the intestine from prolapsing and blood from entering the cavity. The remainder of the circumference of the wall of the rectum is then divided and the vessels in the mesorectum secured. The invaginated portion of the bowel can then be turned downwards so that the mucous membrane becomes internal.

Having drawn down all the slack bowel, I apply a rubber-covered clamp to it and cut the mass away by dividing the bowel below the clamp at the level at which it is to be stitched to the skin. The amount removed varies from 6 to 15 inches. The next step is to suture the divided peritoneum to the drawn-down bowel at about 2 inches above its divided end, and this is facilitated by the clamp, which not only holds the bowel securely but arrests the bleeding from the cut end and prevents the escape of any contents.

This being completed, the final step of the operation is to suture the cut edge accurately to the skin. This I find is more readily accomplished by stretching the lumen of the bowel gently and then inserting four sutures at the four opposing points of the circumference. These sutures should be passed deeply, passing outside the external sphincter and through the skin so that when they are tied the sphincter is approximated to the bowel; each quadrant is then accurately adjusted to the skin.

Notes of Cases.

CASE 1.—Aged 41, married, no children. Was admitted to the Hospital for Women in 1905. Twenty-one years before she had had an operation for the cure of the trouble. Control of the sphincter returned within five weeks of the operation under faradic treatment. This patient has been under constant observation since 1905. She returned some three years after with a large fibroid, for which a total hysterectomy was performed. Some year or so later she again returned with a ventral hernia owing to suppuration of the abdominal wound at the time of the hysterectomy and again two years later with acute appendicitis, requiring immediate operation.

This patient, who was last seen in 1916, has had no further trouble with the rectum. There is complete control of the sphincter, and on passing the finger into the rectum all that can be felt is a linear scar about ½ an inch inside the anus.

CASE 2.—Aged 39, married, eight children. Admitted in 1905. The trouble had existed for many years. 7 or 8 inches of the bowel came down; 15 inches were removed. Paralysis of the sphincter persisted for a long time after the operation.

CASE 3.—Aged 49, married, one child. Admitted in 1912. The history states that the trouble had been present two years only; the protrusion was 15 inches in length. In this case slight suppuration occurred.

CASE 4.—Aged 38, married, no children, admitted in 1915. Prolapse had been present nine years and was very painful to replace. In this case the incision around the mass was made at ½ inch above the cutaneous margin. There does not appear to be any advantage in making the incision in this position; in fact, the hæmorrhage in this case was unusually severe.

CASE 5.—Aged 36, unmarried. Seen in consultation with Dr. Savill, of Bexhill in 1915. The trouble had been present for many years. It was in this case that troublesome suppuration arose in the recto-vaginal septum, necessitating a further operation some months later.

CASE 6.—Aged 46, married, two children. Admitted in 1917. The trouble had existed for years. The uterus was at a low level, but it was situated in a forward position.

CASE 7.—Aged 27, married, one child. This case, which had existed since childhood, was recorded in THE LANCET* and was treated by fixing the rectum in the left iliac region and the uterus by ventrifixation. This patient has since had two normal confinements at Queen Charlotte's Hospital. There was a return of the falling of the uterus after the second, and the patient stated that there was a tendency to a return of the rectal trouble, but I could not get her to extrude any bowel on examination.

Wimpole-street, W.

REPORT ON

EXAMINATIONS OF FÆCES OF CHINESE LABOURERS.

BY F. B. BOWMAN, M.B. TOR.,
MAJOR, C.A.M.C., O.C., NO. 2 CANADIAN MOBILE LABORATORY;
AND
P. D. SAYLOR, M.D.,
CAPTAIN, C.A.M.C.

(*Report to the Medical Research Committee.*)

As numerous reports at different times have shown that Chinese are largely infected with intestinal parasites, it was decided to carry out an examination of several hundred Chinese labourers. These men had nearly all come from Northern China, and a recent report[1] has shown that a large percentage of the people of Southern China are infected with the "hookworm." The question as to the possibility of these northern Chinese being infected arose, and the possibility of their spreading this infection. It was also decided to examine the stools of these men for the presence of typhoid or paratyphoid organisms.

Procedure.—To obtain the specimens a small cardboard plate was given to each man, and he was instructed to defecate upon it at the latrine. A small portion of fæces was then picked up with the small spoon supplied with the specimen bottle, and placed in the bottle, which was then tightly corked. These bottles had been sterilised previously. The sample was then taken to the laboratory for examination. Only 25 were collected each day, for comparatively little time could be spared for this work without interfering with the necessary routine work of the laboratory. For bacteriological examinations the technique outlined by one of us[2] was used—i.e., Endo's plates, followed by Hiss sloped-agar tubes, and later agglutination of suspicious cultures.

To make the examination for ova in the specimens as regular as possible only one preparation from each was made and examined unless the first one was entirely unsatisfactory. It is probable that a much higher percentage of infections would have been found had several slides from each specimen been examined.

It was hoped to examine 1000 men indiscriminately, but as they were detained sometimes for a few hours only before going overseas it was impossible to carry this out without extending the work over a long period of time. The results of the examination of 340 specimens is considered of sufficient interest to be reported. A table is attached which

Table showing Percentages of Parasitic Infections Found.

Diagnosis.	Number of infections.	Percentage.
Ascaris lumbricoides	225	88
Ankylostoma duodenale...	38	11
Oxyuris vermicularis	7	2
Strongyloides stercoralis...	3	1
Trichiuris trichiura...	15	4

* THE LANCET, 1913, ii., 136.

[1] Journal of A.M.A., June 23rd, 1917, lxviii. (No. 25), 1888.

[2] Brit. Med. Jour., August 25th, 1917.

shows the different infections present with percentages. It may be noted that no *tænia* infections were found. The sputum of several cases showing a considerable amount of blood was examined for paragonimus ova with a negative result.

The specimens were not examined carefully for amœbæ unless blood and mucus were present. Only two cases of amœbic dysentery were found and these were acute, and the stools, which were very frequent, contained very large amounts of blood and mucus.

Bacteriological examination of 340 stools showed the presence of paratyphoid A in two of them. The men had no symptoms.

Summary.

The importance and seriousness of hookworm infection as a predisposing cause of many seemingly unrelated acute infectious diseases is well known.

Foster and Sinclair in a recent article[3] declare that among certain Alabama troops on the Mexican border, where 39·9 per cent. of the men were infected with hookworm, the high mortality from infectious diseases was undoubtedly due to this infection.

In California rigid quarantine measures are taken with immigrants from the Orient, and all are examined, among other things, for the presence of hookworm infection before being allowed to proceed.

It is stated by Rosenau[4] that in Bilibid Prison, Manila, P.I., when the Americans took it over the death-rate was 234 per 1000. This high percentage by ordinary sanitary measures was reduced to 75 per 1000, and it was only when the hookworm question was investigated and prisoners were thoroughly treated for this condition that it was reduced to 13·5 per 1000. A large number of these examinations at Bilibid Prison were made by one of us (F. B. B.) while on the staff of the Bureau of Science, Manila, and the comparatively sudden change from a high to a low mortality rate was notable.

The ease with which the infection spreads in non-infected districts is remarkable, and if the percentage of infection among 340 Chinese examined indiscriminately is any indication of the total number of infections among them, among 100,000 there will be at least 10,000 "soil polluters."

The winter and early spring are the seasons when pneumonia, measles, &c., appear, and the possibility of these diseases appearing among the Chinese is not remote. Hookworm infection should be taken into account as a devitalising agent, and thus a predisposing factor in the seriousness of these conditions.

Conclusions.—1. Parasites are common in the fæces of Chinese labourers. 2. Hookworm infection is very prevalent and calls for attention. 3. Paratyphoid A carriers may occur among the Chinese.

Note.—During the month 39 naso-pharyngeal cultures were made from Chinese, and 2 were found positive for meningococci. Agglutination tests proved one to be type I., the other type II.

Incidental expenses connected with this inquiry have been defrayed by a grant from the Medical Research Committee.

[3] Journal of the American Medical Association, lxix. (No. 6), 431.
[4] Rosenau, M. J.: Preventative Medicine and Hygiene, ed. 2, 1916, p. 132.

THE LATE MR. ETHELBERT HOSKING, M.R.C.S. ENG., L.S.A.—Mr. E. Hosking, who died at his home at Turner's Hill, Sussex, on Oct. 22nd, was, until a few years ago, one of the best-known practitioners in North Sussex, where he had practised for over a quarter of a century. A son of Professor William Hosking, Professor of Architecture at King's College, London, he was born in London on Nov. 17th, 1846. He was educated at King's College School and received his medical training at King's College Hospital, qualifying in 1871. In the following year he was appointed resident medical officer at Bloomsbury Dispensary, and from 1874 to 1880 was assistant medical officer at the Surrey County Asylum at Tooting. For a time also he was assistant house surgeon at Salop Infirmary. Afterwards he went to Turner's Hill where he soon gained an extensive practice and took up several public appointments, among them being that of medical officer of St. Saviour's Middle Class School at Ardingly. He retired in 1912, and was then placed on the commission of the peace for the county. He married Annie Sophia, daughter of Dr. Nance, of Eccleshall, Staffordshire, and his widow survives him.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Resumed Discussion on the Value and Limitations of Sanatorium Treatment for Tuberculosis.

A MEETING of this society was held on Nov. 19th, Sir STCLAIR THOMSON, the President, being in the chair, when the discussion on the above subject was resumed.

Sir R. DOUGLAS POWELL said that he was impressed by Dr. Lister's warning against the tendency to exaggerate the direct agency of infection in the production of tuberculosis. If there were no dirty surroundings and bad habits of life the infection of tuberculosis would almost cease to be operative. The ultimate object of all treatment of tuberculosis was to help the patient to secure immunity, and by immunity he meant a power of resistance amounting to a safeguard against fresh attacks of the disease. Some patients would acquire immunity without any orthodox direction or treatment, post-mortem observations revealing many such cases. Some attained a practical immunity who could by no means be regarded as cured of pulmonary tuberculosis. He had seen many people with considerable lesion in one lung for many years with chronic cough and expectoration, more or less bacillus-laden, who seemed immune from fresh attack, and ultimately died of some other disease, amongst which cancer and some gouty affections would, he thought, be found relatively prevalent. The disease in such cases was localised and circumscribed by fibrosis. Many cases did well without sanatorium treatment; the margin of difference in favour of sanatorium over general hygienic management was much less defined than one might expect. On the whole his firm opinion was that sanatorium treatment was, without doubt, the best, not only in the interests of the community but in properly chosen cases, also of the individual patient. He thought it would be advisable to have more subdivisions in sanatoria and suggested (1) a hospital department for acute cases requiring constant nursing, care, and medical treatment; (2) a department for advanced cases; (3) a sanatorium proper with full equipment for cases selected from the two preceding and for incipient and quiescent cases in which immunity was in sight; athletic and industrial exercises would be provided in this department; (4) associated bungalows and chalets in groups for convalescent and after-care cases. Referring to the value of after-treatment, he thought that the patients' prospects depended largely on their own intelligence and care, but also on the conditions of life to which they returned. He thought insurance might help, and that some arrangement might be made whereby employees, when definitely attacked with tuberculosis, should receive a certain portion of their insurance money which would enable them to undergo prolonged sanatorium treatment, and then seek a more outdoor and healthy occupation.

Dr. ARTHUR LATHAM said that both the public and the profession paid too much attention to the infectivity of the disease. The von Pirquet test showed that 2 per cent. of children of 2 years had had tuberculosis, 55 per cent. of those of 15 years, and pathologists said that by the age of 30 every man and woman had evidence of tuberculous trouble. Few could say that a patient had contracted the disease from a certain person, as might be said with regard to scarlet fever, for example. If the defence was undermined by definite factors the disease immediately became active. These factors were *strain* and *stress*. The increase of tuberculosis during the war could not be explained by increased infectivity, but could be explained by the increased strain and stress. He thought sanatorium treatment was the best we had; it regulated the daily stress and exercise. We should not fill our sanatoria with those who had a right to be there, but with those who would do well. We could only remove the disease by removing the strain and stress of working people; until this were done the results would be as unsatisfactory as at the present time.

Sir ARTHUR NEWSHOLME said that during 1916 there were 53,000 deaths due to tuberculosis in this country. Sanatorium treatment was but a link in the chain of measures of treatment. The first was *notification*, which was enforced in 1908. By this means (*a*) the medical officer of health

could get control of the environment of the patient; (*b*) light was thrown on the influence of alcohol, as to whether it (1) increased the opportunities for infection or (2) lowered resistance; (*c*) coöperation between the medical officer of health and the private practitioner was possible. The work of the tuberculosis officers was of value in consulting with the general practitioner and in examination of contacts. By examining the relatives it was often possible to get cases early. Sanatoria were of great value educationally, diminished tendency to relapse, prolonged working life, and decreased the danger to the public. Patients often did extremely well in huts in the back garden; it was better for the patients and safer for the families. The selection of cases for sanatorium treatment should be on purely medical grounds. Infectivity and environment were factors which worked together; both were necessary to the production of disease. The resistance and the dosage varied. He considered massive infection of more importance than the other speakers had done. The object of treatment was the expeditious recovery of the patient and the prevention of infection of others.

Dr. J. J. PERKINS spoke of the causes of the failure of sanatorium treatment. I. Cases of tuberculosis were not sent up at a sufficiently early stage. Sometimes diagnosis was delayed and milder measures were first tried; sometimes—from kindness—the patient was not told of his illness in plain terms. Early diagnosis was required, early speaking out, and the insistence on adequate early treatment. He had seldom met with a refusal to enter a sanatorium when it was possible in the early stages confidently to hold out hope of recovery. He suggested that we should push our diagnosis further back, and send not only patients with tubercle bacilli in sputa to a sanatorium but especially the cases of early hæmoptysis, the tubercular pleurisy, and the case of progressive emaciation and debility, with some pyrexia but few physical signs. II. Further limitations were to be found in the environment to which the patient returned. He hoped much from change of occupation to an outdoor life which the more intelligent should be able to make. The National Association for the Prevention of Consumption was founding a colony with the intention of giving these men a thorough grounding in the various branches of outdoor and farm work in the hope of enabling them to settle on the land.

Dr F. R. WALTERS was firmly convinced of the great value of sanatorium treatment. The only question was as to how far it could be replaced with advantage by dispensary or home treatment. Restoration to health in a sanatorium was usual if the case was suitable and the treatment early, thorough, and prolonged. Suitable cases were those with limited lesions, only moderate constitutional disturbance, no serious complications, originally fairly good constitution, and without history of massive or virulent infection. It was not usually possible to keep a non-wealthy patient in a sanatorium until he was cured. Three or four months might be needed before graduated exercise was even begun. Relapses were usually caused by disregard of simple rules of life, by late application for treatment, or by premature return to unfavourable conditions. To prolong the sojourn under more favourable conditions health colonies were needed. He called attention to the need for physiological subdivisions, according to febrility and exercise capacity, under the purely anatomical groups, as done in the Surrey County Council statistics. From these it appeared that if patients applied for treatment before they had lost their full working capacity, two-thirds would be fit for full work 12 months later, whereas of those who waited until they were feverish five times fewer would have full working capacity a year later. Physiological disturbance was of more importance in prognosis than anatomical extent of the lesion. Shorter expectation of life in the tuberculous did not show that sanatorium treatment was useless—it might result from a poor constitution quâ tubercle, or from unsatisfactory after-conditions. Dr. Walters urged the importance of prompter and more systematic treatment of the febrile tuberculous; health colonies to bridge the gap between sanatoria and full work, more universal training in sanatorium ways, and greater continuity of treatment.

Dr. B. A. RICHMOND said that he had urged the Bermondsey borough council to take municipal beds for the treatment of tuberculous patients. During 1911–12–13 45 cases were sent to the Maitland Sanatorium. In June, 1914, only seven deaths had been reported. Three cases were in close touch with the medical officer four years after discharge from the sanatorium. In each case the occupation had been changed. According to the medical officer's opinion the great difficulty lay in the inability to get suitable occupation, two to three months being spent in a state of semi-starvation looking for work at a time when good food and care were required. The way to keep up the immunity gained in a sanatorium was to improve the social condition of the patient so that he could take advantage of the education received there. There was need to awaken the interest of practitioners in this work. The value and limitations of sanatorium treatment should be settled, and it should be made clear that everyone was not suitable for sanatoria and that the sanatorium was only one link in the chain.

Mr. H. KINGSLEY WOOD, chairman of the London Insurance Committee, said that this was not a single but a mixed problem, and together with housing, maternity and child welfare, &c., must be treated as part of the great problem of national health. Until there was a Ministry of Health to coördinate all authorities the money now spent was largely wasted. Short periods at a sanatorium were useless; the patient returned to a worse stress than when he left.

The Right Hon. C. W. BOWERMAN, M.P., secretary of the Trades Union Congress, said that all were aware of the great value to workmen of sanatorium treatment. If those skilled judges, men in charge of institutions, were enabled to follow men discharged as cured or nearly cured into their ordinary domestic surroundings, one of two things would happen—their hearts would be broken or they would help to form a band of men determined to improve the housing accommodation in this country.

The discussion was adjourned till Nov. 26th, when Dr. A. NIVEN ROBERTSON, Dr. G. A. CRACE-CALVERT, Dr. W. CAMAC WILKINSON, Dr. D J. CHOWRY-MUTHU, Dr. HENRY ELLIS, Dr. JANE WALKER, Dr. JOHN SORLEY, Dr. H. J. CARDALE, and Sir WILLIAM OSLER will take part.

Reviews and Notices of Books.

1. *Physical Remedies for Disabled Soldiers.* By R. FORTESCUE FOX. M.D. Lond. With 3 plates and 84 illustrations. London: Baillière, Tindall, and Cox. 1917. Pp. 277. Price 7*s.* 6*d.* net.
2. *Massage: Its Principles and Practice.* By JAMES B. MENNELL, M.A., M.D., B.C.Camb. With 135 illustrations. London: J. and A. Churchill. 1917. Pp. 259. Price 8*s.* 6*d.* net.

1. IN the past the various physical methods of treatment, massage, manipulations, exercises, baths, heat, light, electricity, have been left very largely to the specialist, the methods adopted and the results attained being comparatively unknown and unrecognised by the profession at large. Too often the treatment has actually been left in the hands of the unqualified practitioner of the particular physical method, without even expert direction by a medical man. The inevitable result has followed. Hospital departments for physical treatment have in many cases become the dumping ground for chronic, difficult, and often hopeless cases, so that these branches of work have not attracted the best assistants, and the work has become discredited. Claims have been made that are not justified by results, and in many cases the whole system has tended to develop into quackery. Physical treatment early came into prominence in the surgery of war. First it became obvious that a very large body of masseuses would be required; these have been obtained and their work has been invaluable. Then, first in France at the Grand Palais, physical remedies of all sorts were collected together and utilised as combined methods of treatment on the same patient, a rational course which has been still further rationalised in the orthopædic hospitals in this country by the combination of physical methods of treatment with surgical clinics in the same institution. Dr. Fortescue Fox was responsible for a campaign which ended in this extension of the combined method of physical treatment to England. His book is welcome as giving a brief but clear and rational exposition of the various physical

methods, their indications, and the results to be expected so far as our present experience goes. Dr. Fox has himself written the section on hydrological methods and most of the remainder of the book, but he has been assisted by such authorities as Professor Tait McKenzie on mechanical methods and exercises, Dr. J. B. Mennell on massage, and Dr. F. Hernaman-Johnson on electrical treatment. Naturally in such subjects, which are comparatively new to the profession at large, there will arise criticism of detail. For example, the mechanical exercisers, usually named after Zander, which Dr. Fox describes, have found but few advocates in this country. But it is only right that the knowledge of these methods should be widely diffused, so that everyone may try them and form their own conclusions, and Dr. Fox makes no miraculous claims for any method but only asks for their trial.

2. Massage has few text-books in this country, and perhaps not one that is really first-class. Dr. Mennell's book should fill a long-felt want. It treats of massage as it should be treated, as a means to an end. Massage in the treatment of injuries is only a step towards the attainment first of passive then of active movements, leading on finally to treatment with active exercises with or without apparatus. Dr. Mennell deals with it in this spirit, he devotes a considerable space to treatment by exercises, and he describes his apparatus, which is certainly a model of compactness and at the same time of simplicity. In this work again there is room for criticism, and it is to be hoped this will come. It is time that the whole profession studied massage; it can be studied in theory in Dr. Mennell's book, a practical observation of patients under treatment and of results will then lead on to the formation of individual opinions, not upon the value of "massage" as a therapeutic method, but upon the value of the different methods included under this generic term.

Experimental Pharmacology. By DENNIS E. JACKSON, Associate Professor of Pharmacology, Washington University Medical School, St. Louis, U.S.A. London: Henry Kimpton. Pp. 536. Price 20*s*.

TWENTY years ago laboratory instruction in the medical schools of the United States was confined to the departments of anatomy and pathology, except in one or two of the most advanced centres. How far medical education has progressed from the didactic lecture which then formed the staple of instruction is shown by this elaborate description of the technique of pharmacological experimentation. The author gives no less than 158 experiments, more than one half of them on mammals, which may be used to elucidate the action of drugs; not all of these are intended to be given in any one course, the instructor is given a wide choice of illustration. The directions are simple, accurate, and detailed, so that the student can readily follow them; some of them may appear a little startling in present conditions, as where the student is advised to give a dog half a pint of cream as a preliminary to the study of the lymph circulation. Many of the more difficult operations are obviously intended to be demonstrated by the teacher rather than performed by the student himself; for example, few students can be expected to insert cannulæ into the thoracic or the pancreatic duct without much previous experience in operations of this kind. In this country this manual can hardly be used by students under the regulations on experiments on animals. But it may be highly recommended to teachers of pharmacology, for it offers a wealth of experiments which may be used to illustrate lectures, and the care with which these are described renders it easy to perform those which may be selected. It deserves attention also from investigators in the fields of physiology, pharmacology, and pathology for its review of reliable methods and for many useful hints drawn from the author's experience. It contains nearly 400 illustrations (24 full-page colour plates), some of which are superfluous, but others presenting the anatomical relations and the successive steps of the operations are extraordinarily useful. As examples the series of drawings of the exposure of the salivary ducts and nerves may be cited. When these are compared with the single woodcut which is generally supplied of the operation, the advance may be appreciated. Altogether this book promises to lighten the labours of many teachers, and will prove almost indispensable in laboratories of experimental research.

The Method of Enzyme Action. By JAMES BEATTY, M.A., M.D. Dub., D.P.H. London: J. and A. Churchill. 1917. Pp. 143. Price 5*s*. net.

THE hypothesis put forward by the author in these pages as to the mode of action of enzymes has at least the merit of simplicity. Without dealing completely with his summary given in the last section of the book, we may say that his general conclusions is that the whole of the chemical action of enzymes may be reduced to the action of hydrogen and hydroxyl, and this, he adds, is to be expected, as the two substances everywhere present when life first developed were water and air. The use of enzymes, he continues, is to control the rate and the sphere of naturally occurring reactions. The former is secured by increasing the number of the active H and OH radicles; the latter by limiting them to definite points to which the substrate of the reaction is also attracted. It is suggested that in the light of his hypothesis it ought to be possible to manufacture enzymes by adapting the constitution of any given enzyme to a congenial substrate or environment. Dr. Beatty's work should attract the attention of all workers in this field. It is a most interesting contribution on the subject that invites many directions of research, whether it does or does not some day culminate, to use the author's last words, in "the synthesis of life itself."

New Inventions.

THE ADMINISTRATION OF SALINE SOLUTIONS.

Lieutenant-Colonel P. Fiaschi, A.A.M.C., has called our attention to a method for the rapid intravenous administration of prepared sterile saline solution, or of sterile gelatin saline solution (Hogan's solution), in the field. "The difficulties of preparing a surgically perfect saline solution," says Lieutenant-Colonel Fiaschi, "and of being able to rapidly give this intravenously to a number of cases demanding such a procedure, either during the rush of an engagement, or even to a few cases in periods of comparative quiescence in the fighting sector, are reserved only for those of us who have attempted this rational and physiologic method of treatment on the Egyptian Desert, at Gallipoli, or at the Somme." By his method the solution is supplied in bottles with automatic stoppers, each holding 500 c.c., together with a siphon and intravenous cannula apparatus. These are shown in the illustration. The bottle is warmed to blood heat in a basin of water, the stopper removed, and the cannula apparatus fitted to the mouth of the bottle. The solution is allowed to flow through the cannula by inverting the bottle. The method of use is quite simple, and it is easy to double the quantity of fluid administered by using two bottles in place of one.

The sterile saline solutions (0·9 per cent. sodium chloride in glass-distilled water) and sterile gelatin saline solution (gelatin 2·5 per cent., sodium chloride 0·9 per cent., sodium carbonate 0·2 per cent.) in bottles with automatic stoppers, autoclaved (15 lb. pressure for one hour), are prepared by Messrs. Burroughs, Wellcome, and Co., who supply one siphon and intravenous cannula apparatus to each six bottles.

DEVON AND EXETER HOSPITAL.—At the last meeting of the governors of the Devon and Exeter Hospital it was reported that the deficit balance against the charity now amounted to £2100; the President (Sir E. Chaning Wills) gave £500 towards reducing this deficiency. Two years ago Sir E. Chaning Wills gave £1000 for the funds of the institution.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 24, 1917.

The Value of Sanatorium Treatment.

SANATORIUM treatment has now been on trial in this country for about a generation, and there has been time to form a considered opinion upon its merits. Although the debate at the Medical Society of London on the Value and Limitations of Sanatorium Treatment, begun on Nov. 12th, was again adjourned on the 19th, it was evidently the conviction of a large proportion of those taking part in it that sanatorium treatment, whatever its limitations, is the best treatment that we yet have for early pulmonary tuberculosis. The immediate results under favourable conditions are obviously very good, as seen in the summary given by Dr. DAVID LAWSON last week of a thousand cases on the point of leaving his care at Banchory. Of these, 53 per cent. had appreciated during sanatorium treatment to the extent of probable arrest of disease, and a further 27 per cent. had definitely improved. Dr. W. O. MEEK, whose paper we publish in full this week, finds equally favourable results in the different class of patient for which Frimley Sanatorium provides. Given a reasonable selection of cases for treatment, he finds the response and the immediate result to be almost uniformly good.

But, except in the case of the well-to-do, the immediate effect of sanatorium treatment gives no trustworthy indication of the ultimate result. Professor SIMS WOODHEAD and Mr. VARRIER-JONES, in a communication to our columns this week, express the fact in exact terms when they state that the well-to-do person has three times more chance of keeping sound after treatment than has the working-man. Recognition of this fact has, indeed, resulted in certain quarters in branding the sanatorium treatment of the working-classes as a complete failure. But figures based on sound clinical observation and analysed on logical methods must replace general impressions. Dr. NOEL BARDSWELL has compared the prospect of life of sanatorium patients, as they leave Midhurst Sanatorium, with the actuarial expectation of life for a healthy person at the same age. He finds that in first-stage leavers the prospect of life was about one-sixth, and in second-stage leavers about one-twentieth of the normal expectation. The calculation is a novel and useful one, but Dr. BARDSWELL pointed out himself that the comparison should in fairness be made with the prospect of life for the tuberculous patient *not* undergoing sanatorium treatment, but the figures for such an analysis, however, are not available. Although Dr. MEEK did not put the Frimley figures into similar form, he gave a most instructive comparison between two series of leavers with apparently equal prospect of maintaining their health. In the one case the patients returned to their former occupation in and about a large city, and of these 30 per cent. were well and at work two years later. Of the second group, who changed their environment in accordance with the advice given to them, 80 per cent. were continuously well and at work after the same period. Sanatorium treatment cannot fairly be judged apart from what precedes and what succeeds it. It has been described as one link in a chain of remedial measures, or, in the language of metaphor, as a stanza in the lullaby which tuberculosis sings from the cradle to the grave. All that can fairly be expected from sanatorium treatment is that it shall teach to those who are experiencing it the hygiene of the healthy life, and shall raise for a brief period the resistance to the disease which has been lost under unfavourable circumstances. Nothing can prevent a return to the environment which produced the disease from leading to a renewed breakdown.

Sanatorium treatment is therefore bound up so closely with after-treatment that the two cannot in any useful sense be considered apart, and where efficient after-care is lacking no result can be expected. Conditions in London are especially disappointing, and the two distinguished laymen who contributed to the adjourned discussion of this subject at the Medical Society last Monday were not impressed by the value obtained in London from expenditure on sanatorium benefit. One described it as so much money thrown away, and both urged upon their hearers the necessity of drastic reform in the environment of the working-classes. An increased hygienic standard for town life is essential to maintain the immunity acquired during sanatorium treatment, and will, as Dr. T. D. LISTER pointed out trenchantly in opening the debate, largely avoid the necessity of sanatorium treatment at all if it is applied in advance. Do away with dirty surroundings and bad habits of life, Sir DOUGLAS POWELL put it, and the infection of tuberculosis would almost cease to be operative.

Georgian Medicine.

GEORGIAN medicine, especially the theory and practice of our science and art during the half century when GEORGE III. was king, formed the interesting subject chosen by Dr. ARNOLD CHAPLIN for the FitzPatrick lectures delivered last week before the Royal College of Physicians of London. In giving the chief reasons which had determined this selection Dr. CHAPLIN stated that the reign of GEORGE III. witnessed the last struggle of Feudalism to control the acts of mankind, and the dawn of those conceptions of civil, intellectual, and religious freedom under which we at present live. This, of course, is substantially true, though a good many vested abuses remained to be dealt with in Victorian days, nor is the victory over them yet complete. Between the general conditions of intellectual advancement and the special progress taking place in medicine at the close of the eighteenth and beginning of the nineteenth

centuries Dr. CHAPLIN instituted a just parallel, describing the movements in which mere speculation gave place to inquiries which, founded on a true basis, became steps towards scientific freedom. But advancement in medical knowledge which gave such promise at the end of the seventeenth century, for some reason, not easily explained, slumbered for the first half of the eighteenth century, and enthusiasm was only rekindled by the work of HALLER, MORGAGNI, and BAILLIE, whom Dr. CHAPLIN regards as the real founders of modern medicine.

The numerical strength of medical men resident in England and Wales was computed by Dr. ARNOLD to be something under 5000 at the end of the eighteenth century, from which figures, which he submitted as quite rough, it would seem that the proportion of medical men to population has not much varied. The control exercised over them by the Royal College of Physicians of London, the Company or Corporation of Surgeons, and the Society of Apothecaries was capricious, stringent in many ways, and inefficient in others. The passing of the Apothecaries Act in 1815 placed a considerable portion of the medical profession under the ægis of an Act of Parliament, and from this time conditions arose which made the standardising of professional knowledge, and the institution of some professional body to undertake such work, a foregone conclusion. Soon it was seen that the facilities existing in England for the acquirement of medical knowledge were good if properly used. In this part of the lecture the scope of education at the Universities and in London was given in detail, and it was shown how extensive was the standard of culture expected of those who intended to become physicians. The curriculum at the London hospitals and private schools in the metropolis was discussed, and an account was given of the rise of dispensaries, 23 of which were founded during the reign of GEORGE III. Space was also devoted to a consideration of the activities of the various medical societies established during the reign, several of which are in existence at the present time. Following on the above, a detailed account was given of the great contest in the College of Physicians between the Fellows and the Licentiates, and from Dr. CHAPLIN'S learned picture there emerges the definite impression that those of us who regard the medical profession of a century ago as either ill-trained or unprogressive hold a quite unsound opinion.

In the second lecture the individual work of physicians who contributed to the advancement of medical knowledge was considered. After giving some account of the sources from which information concerning the activities of individual leaders could be gleaned, Dr. CHAPLIN showed that for the first 30 years of the reign of GEORGE III. physicians were purely clinicians, and relied entirely upon knowledge of disease gained at the bedside. As types of these clinicians, the characters and work of HEBERDEN, Sir GEORGE BAKER, and Sir HENRY HALFORD were described at some length. But towards the end of the eighteenth century the clinicians had reached limits beyond which it was almost impossible to advance, and were compelled to make way for men who, in addition to being possessed of clinical knowledge, had brought to their aid the chemistry and physiology of the day, which were already shaping into scientific pathology. These sciences, owing respectively to work by HALLER, MORGAGNI, and later BAILLIE, to whose names that of LAVOISIER should be added, had already been placed upon a sound basis, and were in a position to lend their aid to practical medicine. The first to make use of the newer methods was MATTHEW BAILLIE, the father of medical pathology, but he was soon followed by WILLIAM PROUT, who applied the lessons of chemistry to the elucidation of medical problems. After the work of these men medicine was able to make rapid strides, and the logical sequence of their efforts found expression in the brilliant discoveries of the modern clinicians, of whom BRIGHT, ADDISON, WATSON, and JENNER were the prominent examples selected by Dr. CHAPLIN for mention, as well as ROBERT WILLAN, who founded the modern school of dermatology. The position of obstetrics during the reign of GEORGE III. was very interesting. Most of the activity in this branch of medicine was due to the teaching of SMELLIE, although the influence of THOMAS DENMAN, WILLIAM OSBORNE, WILLIAM HUNTER, and DAVID ORME played a considerable part. Strong feeling was excited among the public by the introduction of "men midwives" into this department of medicine, and it lasted in England down to the time of WILLIAM IV., in spite of the fact that on the continent the work of obstetrics had been in men's hands many years.

In Dr. CHAPLIN'S summary of the work of those physicians who contributed most to the advance of medical science during one of the longest reigns in our history, he has employed as outstanding examples the characters and work of THOMAS YOUNG, WILLIAM HYDE WOLLASTON, and WILLIAM CHARLES WELLS. In the lectures to be delivered next year quite other medical protagonists should obtain mention, for the subjects to be considered will be the rise and development of the Army and Naval Medical Services and the care of the insane. We are glad that such particular attention was paid to the work of WELLS, both as a physician and a man of science, for his valuable contributions to medicine and natural philosophy have been somewhat neglected. The claim for WELLS as one of the foremost intellects of the reign has much to support it. In the domain of medicine his papers on the presence of albumin in the urine and his able differentiation of the several forms of dropsy certainly paved the way for the great work of RICHARD BRIGHT. We owe to his researches, also, the first exact explanation of the phenomenon of dew.

Dr. Marcus S. Paterson, medical director of King Edward VII. Welsh National Memorial, has resigned his appointment on account of illness. We are glad to learn that he is now recovering his health.

Dr. Edward Burd, who died last week at his residence, Newport House, Shrewsbury, at the advanced age of 91, was a well-known consultant in the West of England, and the first man to take the degree of Master of Surgery at Cambridge.

Annotations.

"Ne quid nimis."

PRISON DIET.

REPLYING to a question in the House of Commons on Oct. 25th, the Home Secretary alluded to the revision of the prison dietary which had been carried out with a view to economy in the use of foodstuffs. He added that the effect of the new diet was being carefully watched by the medical officers of the prisons, who freely used their power to supplement the diet in case of necessity. We understand that the calorie value of the diet works out in round figures as follows: In local prisons, for males, 2900; for females, 2500. In convict prisons, for males on ordinary labour, 3200; on very hard labour, 3500; for females, 2650. The record of body-weight which is being kept will afford a ready criterion as to whether the diet results in a satisfactory equilibrium under the conditions of prison life. It may be recalled that the generally accepted standard of diet for an average man doing an average day's work is 3400 calories, but in making a comparison between this standard and the figures given above for prison diet two points should be borne in mind. In the first place it is doubtful whether there are actually 3400 calories available at the present time for every member of the community. And secondly, the prison figures are to be taken as the caloric value of the food *as eaten*, whereas in the other case the value is for food *as purchased*. Langworthy has given a round figure of 15 per cent. for the depreciation in caloric value between the purchased food and the quantity which passes the lips, although in these days of economical cooking and well-tidied plates the discrepancy is probably less. In neither the one nor the other is allowance made for the indigestible portion of the food which passes the alimentary canal unchanged, and is variously reckoned as from 5 to 11 per cent.

A SWISS CANCER INVESTIGATION.

THE council of the Swiss Association for Combating Malignant Disease has addressed a circular to the Swiss doctors calling attention to the conspicuously high incidence of cancer in Switzerland and to the fact that nothing is yet known either as to the cause of the disease or the explanation of its special prevalence in that country. The council therefore asks for precise statistical and clinical information in regard to all fatal cases of cancer of the breast. Special notes are requested, first, of the influence of lactation, mastitis, or previous innocent tumours (fibro-adenoma, cysts) on the development of cancerous growth, and, secondly, of the effect on prognosis of operation, Roentgen rays, or radium applications. This inquiry will be based on the death certificates sent in to the Statistical Department. Similar information is also requested in regard to patients still living at the end of 1915 who had been under treatment for mammary cancer during the preceding five years. A modest honorarium of 2 francs is offered for each schedule thus filled in, and the association hopes to obtain statistical material which may lead to the formation of some useful opinion. Switzerland has, as is well known, the highest cancer death-rate in the world, although alone among civilised countries the rate is a diminishing one. Inspection of all dead bodies by a medical man is compulsory in Switzerland, and this may to some extent account for the highness of the death-rate in cancer. Any proposal to amplify the statistical information on cancer in that country is valuable and welcome, and the selection of mammary cancer for intensive study is a wise one. The frequency of operation, with its accompanying accuracy in pathological diagnosis, secures a firm objective basis for the data, and the points selected for the questionnaire are precise and well selected. The demarcation of urban, industrial, and pastoral communities in the population is definite and should enhance the value of the results obtained.

THE TREATMENT OF WAR NEUROSES.

WE publish in another column a letter from Dr. Thomas Lumsden, bringing to the attention of the medical profession a scheme for the treatment of shell-shock patients which he has already placed, in something the same form, before the general public in the columns of the *Times*. Under this scheme, known as the "Country Host Institution," neurasthenic patients of suitable character would be billeted on country hosts upon the usual terms of 3*s*. per diem, pay and separation allowances being drawn. The patients, whom Dr. Lumsden suggests should be mild sufferers from shell shock, would be carefully selected and regularly inspected, so that in event of breakdown or illness they could be transferred to hospital. The idea of thus getting separate attention for a certain class of sufferers from shell shock in suitably peaceful environment has already received, Dr. Lumsden points out, an optimistic reception from the President of the Special Medical Board on Neurasthenia, and has been promised a trial by the highest military authorities, and he begs that medical men who are in sympathy will put themselves into communication with him. There can be no doubt of the medical endorsement of the scheme whatever. Granted that it can be made to run, it would prove veritable salvation to some of these patients; and we may assume that its unqualified rejection, if Dr. Lumsden is correct in believing that such rejection has occurred, has been owing to practical difficulties of organisation, or doubt as to whether the large amount of help needed would be forthcoming.

LUPUS PERNIO.

Lupus pernio is one of the rarer diseases of the skin, so-called, and was first described by Besnier in 1889. He believed it to be a vascular form of the commoner lupus erythematosus, judging from clinical grounds. Subsequent investigators set it down among the group of cutaneous tuberculides; the tubercle bacillus itself has, apparently, never been found in the lesions of lupus pernio. Dr. Jörgen Schaumann has recently published[1] an elaborate study of the histology and bacteriology of the disease, and he gives good reasons for supposing that it is not associated with tuberculosis at all. Contrariwise he connects it with another rare skin disease, the cutaneous sarcoid of Boeck (1899), which may be identical with "Mortimer's malady" described in 1898 by Hutchinson; both lupus pernio and Boeck's sarcoid of the skin are now said by Dr. Schaumann to be evidences of one

[1] Nordiskt. Med. Arkiv, Stockholm, 1917, Afd. II., xlix., Häft 6.

and the same disease, a "tuberculoid lymphadenia," characterised by the appearance of specific lesions in the lymphatic glands, tonsils, bone marrow, lungs, spleen, and liver. He goes on to say that this tuberculoid lymphadenia has no connexion with tuberculosis or with any other known infection, which makes one wonder why he attaches to it the misleading name "tuberculoid." He further proposes to call it "lymphogranuloma benignum," a benign infectious granuloma. The chief novelty of Dr. Schaumann's work appears to lie in the fact that he has made elaborate histological and bacteriological and skiagraphic researches on his three patients with lupus pernio and his single case of Boeck's sarcoid, with the result that he has found out what previous investigators have missed—namely, that the lesions in these diseases are far more widespread than was hitherto suspected. The cutaneous lesions are in reality of secondary importance in the disease, appearing, perhaps, only late in its course, and yielding to treatment, while the characteristic deposits in the lymphatic glands or lungs or liver persist unaltered. These deposits are similar, in the case of the lymphatic glands at any rate, to those in the cutaneous lesions, and consist of follicles filled with epithelioid cells and giant cells, surrounded by lymphoid and plasma cells. The fingers in lupus pernio often present the outward appearance of tuberculous dactylitis, as is well known; but in the former disease the X rays show patches of bony rarefaction at the ends of the phalanges, whereas in tuberculous ostitis the lesions tend to occur rather in the middle of the phalanges and to cause a swelling of the bone absent in lupus pernio. And these bony changes may occur in lupus pernio before the cutaneous lesions. In none of Dr. Schaumann's patients did tuberculin injections (up to 15 milligrammes) give rise to any focal or general reaction; and he failed to produce tuberculosis in experimental animals by inoculation with fresh granulomatous tissue taken from his patients. Bacteriological cultivations made from the glands and cutaneous lesions yielded him diphtheroid bacilli, streptothrices, and staphylococci; he attaches no etiological importance to any of these organisms, pointing out that similar growths have been obtained from the cutaneous lesions in leprosy and other affections.

THE PREVENTION OF NUISANCES ARISING FROM FLIES AND PUTREFACTION.

THE results of a series of investigations on the prevention of nuisances arising from flies and putrefaction are recorded in a valuable paper contributed to the October number of the *Journal of Hygiene* by Mr. F. W. Foreman, F.I.C., and Dr. G. S. Graham-Smith. The findings in all directions are in favour of the use of coal-tar creosote oil of "country make." Thus, for killing eggs or larvæ in their breeding grounds the authors find coal-tar oils, and especially creosote oil, to be most satisfactory reagents. Flies sprayed with these oils are killed, and they are repelled from substances which attract them, such as decaying bodies and fæcal material, and they are kept out of habitations by means of the repellent constituents of coal-tar oils. In regard to the treatment of decomposing carcasses, coal-tar creosote oil gives the most satisfactory results in practice and exhibits most of the properties required of such a reagent for the purpose. It is pointed out that in the superficial treatment of intact or opened carcasses, and other putrescible materials, reagents should be used which adhere to the greasy surfaces. Films are so formed rendering the skin waterproof and killing the bacteria in it, thus checking putrefaction by preventing the access of water and putrefactive bacteria to the tissues. The reagent should also be capable of eliminating any stenches which may arise, repelling flies, killing the eggs or larvæ, resisting the action of water, and remaining operative in all respects for a long period. Watery emulsions of disinfectants appear to be deficient in most of these properties, and only undiluted oily reagents possess them. In their chief conclusions the authors state that experiments with the bodies of horses show that they behave in the same manner as those of smaller animals, and can be efficiently treated in the same way. A body was preserved by surface treatment alone for a long period, and produced no appreciable nuisance from smell. For large carcasses relatively less fluid is required for surface treatment owing to the smaller ratio of surface to weight. The treatment of human bodies under war conditions has given satisfactory results. Flies have been kept from entering such places as dug-outs by hanging sacks treated with creosote oil mixtures over the entrance. Adult flies in dug-outs and other situations and on putrescent material are killed by spraying. Latrines have been kept free from flies by spraying. The paper contains full instructions for using the creosote oil mixtures, and the research has evidently led to some important practical issues.

THE PRESCRIBING OF COCAINE.

MORE than a year ago[1] we called attention to the Defence of the Realm Regulations with respect to the sale of cocaine, and although these Regulations have now been in force for more than 15 months, there is evidence that practitioners are not all cognisant of the bearing of them. At a recent prosecution of a pharmaceutical chemist convicted of dispensing cocaine contrary to the Regulations, and fined £25 on each of two counts, it was stated that in the one case the prescribing doctor failed to comply in every material respect with the Regulations, and in the other in two important respects. The defending solicitor contended that the doctor, although not summoned, was the person mainly responsible in both cases, and that the chemist had committed only technical irregularities. It may therefore be well to recapitulate here the Regulations, which are both stringent and precise.

A medical man who writes a prescription of which cocaine is one of the items must:—

(1) sign it with his full name, his address, and his qualifications,

(2) write the date upon it,

(3) mark it with the words "Not to be repeated,"

(4) specify the total amount of cocaine to be supplied;

and further, in the case of a practitioner who dispenses his own medicines, he must

(5) enter the ingredients of the prescription with the name and address of the person to whom it is supplied in a special book open to inspection.

The only exceptions to these instructions are: (1) where the medicine to be supplied is a proprietary one, it is sufficient to state the amount of the medicine and not the total amount of cocaine it contains, and (2) in the case of prescriptions written on Health Insurance forms, the practitioner's address and qualifications, and the words "Not to be repeated" need not be marked on the prescription. It should also be added that prescriptions containing less than one part of cocaine per thousand do not come within the scope of the Regulations.

However troublesome the carrying out of this routine may be to the practitioner, he has no

[1] THE LANCET, August 5th, 1916.

alternative but to comply. Even if the chemist takes the responsibility of dispensing a prescription not in accordance with the Regulations, the practitioner is not legally protected, inasmuch as under the Code, as consolidated and revised to Sept. 30th, any medical practitioner giving a prescription otherwise than in accordance with the provisions shall be guilty of a summary offence against the Regulations and is therewith liable to any penalty up to penal servitude for life. Should the Regulations be found to press hardly upon patient and doctor in material respects it will obviously be more expedient to make representations in the proper quarters, rather than to take the serious individual risk of infringing the Regulations.

ENLARGEMENT OF THE SUPRARENAL GLANDS IN A CASE OF DIABETES.

THE current view of the pathology of diabetes is that the disease is due to failure of the internal secretion of the pancreas, which is in some way necessary for the normal metabolism of carbohydrates. But the internal secretions of other glands —adrenals, thyroid, and posterior lobe of the pituitary—are known also to play a part in carbohydrate metabolism, and administration of their extracts produces glycosuria. This is generally regarded as due to an antagonistic effect on the internal secretion of the pancreas. However, in diabetes little is known of changes in glands other than the pancreas. In the *Medical Journal of Australia* Mr. W. F. Litchfield and Mr. E. M. Little have reported the following case:—

A widow, aged 53 years, was admitted into the Royal Prince Alfred Hospital, Sydney, under the care of Mr. Morton, on Feb. 22nd, 1917, for gangrene of the big, second, and third toes of the left foot. She had suffered from thirst and a large appetite for eight months. The urine contained sugar and albumin, and had a specific gravity of 1030. She was fat and had a profuse growth of hair on the chin. On the 27th the affected toes were amputated, and on March 20th the foot was amputated on account of recurrence of gangrene. The stump did not heal well and ultimately became gangrenous. A large bedsore formed over the sacrum. She became thinner and weaker, and died comatose on April 11th. The necropsy showed hypertrophy of the left ventricle and atheroma of the aorta and of the coronary arteries. The pancreas was atrophied and hard. The kidneys appeared normal, except that the vessels were rigid. The suprarenals were much enlarged, particularly the left, one end of which was large and globular, suggesting a new growth. The pituitary appeared normal. Under the microscope the kidney showed fibrosis and thickened vessels and the pancreas a fine fibrosis of the whole gland. The islands of Langerhans were present in normal numbers. The suprarenals showed an increase of glandular substance, which appeared to be chiefly in the cortical portion. Nothing abnormal was detected in the pituitary gland.

The outstanding features of the case were the association with diabetes of hypertrophy of the suprarenals and pronounced arterio-sclerosis. Were these correlated in any way? It is established that adrenalin in excess in the blood mobilises the sugar stored in the liver, and also that it constricts the small arteries. Professor Halliburton thinks that "the action of the pancreatic hormone is best explained on the hypothesis that it acts as a natural antagonist of adrenalin," and that when the pancreas is diseased or removed "the action of adrenalin is unrestrained, and thus a diabetic condition is produced." Mr. Litchfield and Mr. Little suggest that in their cases some agency brought about hypertrophy of the suprarenals and that the consequent increased secretion of adrenalin caused arterio-sclerosis, from prolonged constriction of the small arteries, and induced diabetes and ultimately fibrosis of the pancreas from overwork of the organ in its vain attempt to counteract the excessive secretion of adrenalin. But the cause of the adrenal hypertrophy remains unexplained. According to this view pancreatic diabetes would be primarily an adrenal disease. In his work on the "Internal Secretions" Biedl states that many writers have observed hypertrophy of the suprarenals, sometimes of the cortical substance and sometimes of the chromaffin substance, in cases of arterio-sclerosis, and that some have attempted to show a connexion between chronic renal disease and overaction of the adrenal system. The case now reported is an important contribution to the new and fascinating field of the pathology of the internal secretions.

THE BRITISH MARRIAGE-RATE AND THE WAR.

THE Presidential address of Sir Bernard Mallet, the Registrar-General of Births, Deaths, and Marriages, delivered on Tuesday last at the Royal Statistical Society, dealt in a valuable manner, because of his clearness, with those large questions of racial advance or decline which may dictate the fate of the world at the close of a devastating war. On the subject of the marriage-rate of this country he was particularly interesting. For England, Scotland, and Wales he indicated that a fortunate rise in marriage-rates has taken place, though this rise appears to have been in continuation of one which had already become apparent before the war broke out. The marriage-rates were not, as a matter of fact, increased at first by the outbreak of war, but at the beginning of 1916 occurred a sudden rise, due to marriages contracted by young soldiers in an army which was rapidly nearing its present immense size. The rise was not continued throughout the year, but has had its effect. Sir Bernard Mallet's summary of the actual figures shows that 200,000 people in England and Wales have been married between August, 1914, and June, 1917, who in the ordinary course of events would not have been married; the corresponding figure for Scotland he puts at 8000, while in Ireland the number of marriages has remained fairly constant, not appearing to be materially greater than the normal in the period from August, 1914, to June, 1917. These British figures Sir Bernard Mallet finds to be in complete contrast with those prevailing in Germany, and for the contrast he gives two reasons. The first is that an enormous German Army, being thoroughly prepared, rushed on to foreign soil at the outbreak of war, while the bulk of the British Army remained for some time under training at home, so that the men enjoyed opportunities for marriage that were largely denied to the German Army. The rise in our marriage-rates being practically dependent upon the size of the Army, the second reason for its occurrence has been the payment of substantial separation allowances and pensions. The effect which has already been produced by the war marriages, or rather by the abnormal number of marriages which took place in the year ending March, 1916, has had a real influence, at any rate for the time, in arresting the decline of births, which has been a feature in the statistical records of all civilised countries for some years. It is of good omen to learn that this decline has not affected the United Kingdom to anything like the extent to which it has affected Germany and Hungary.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Queen's University of Belfast.

AT a meeting of Senate, and at a meeting of Convocation, of the Queen's University of Belfast held separately on Nov. 16th, resolutions were unanimously passed with the object of putting forward a claim to Parliamentary representation under the scheme for redistribution of seats in Ireland. Committees were appointed to make representations to the Government.

Child Welfare in Portadown.

The fine residence, erected some years ago in Portadown by Miss Carleton, has most generously been handed over by that lady to the town of Portadown to be used as a centre in association with the maternity and child-welfare scheme adopted by the urban council and the local nursing society.

Ulster Medical Society.

At the opening meeting of the winter session the incoming President, Dr. W. Donnan, of Holywood, co. Down, delivered an address on Chemical Physiology. A discussion arose on the attitude of the public health authorities to the schemes for venereal treatment, and the following resolution was unanimously passed:—

That in the opinion of the Fellows and Members of the Ulster Medical Society it is inadvisable that any public health scheme for the treatment of venereal diseases shall be adopted until it is first placed before the medical profession of the affected area for consideration and discussion—the practice which has been followed by Local Government Boards in England and Scotland.

It was noted that in regard to the child-welfare scheme put forward by the health committee of the Belfast Corporation, and subsequently approved by the Local Government Board, the local medical profession had never been consulted.

Tuberculosis in Belfast.

A report has just been issued by the chief tuberculosis officer of Belfast for the three years ended March 31st, 1917, on the scheme of the Belfast Corporation for the Treatment of Tuberculosis. In the last annual report of the Irish Local Government Board this is described as "the most comprehensive scheme in Ireland and one of the most complete in the United Kingdom, providing, as it does, for institutional, dispensary, and domiciliary treatment, not only for all insured and exempt persons, but also for all residents in the city suffering from tuberculosis." The cost of the scheme for the third year under review amounted to just over £30,000. Commenting on this expenditure, the tuberculosis officer writes: "Judged by the standard of death-rate, one might feel inclined to say that it had failed," for, in 1916, the death-rate from pulmonary tuberculosis apparently remained stationary in Belfast—namely, 2·0 per 1000. But claim is made to valuable results in individual cases, in more accurate diagnosis, in prolongation of life, and in rest and education. It is to be hoped that further statistical reports will show a distinct fall in the mortality of pulmonary tuberculosis, for only so can the large outlay on such a scheme be justified to the lay mind.

The Late Dr. William Graham.

Dr. W. Graham, superintendent of the Belfast Lunatic Asylum, whose sudden death, on Nov. 6th, was due to cardiac embolism, secondary to a fracture of the neck of the femur, was a native of co. Antrim, and educated at Queen's College, Belfast, graduating M.D. R.U.I. in 1882. He succeeded the late Dr. Merrick in 1895 as superintendent of the Belfast Asylum, retaining this position until his death, when he was the senior asylum superintendent in Ireland. An acute clinical observer, Dr. Graham was also a remarkable organiser, who got the best work out of all those associated with him. The new asylum at Purdysburn, Belfast, with its villa colony system and its non-restraint method of treatment, was largely a product of his initiative. For some time he had held the rank of lieutenant-colonel in view of his appointment as head of the hospital in Belfast for soldiers affected with mental disease.

The Ballinrobe Guardians and their Medical Officers.

The state of affairs at Ballinrobe continues to be one of considerable importance to members of the Irish Poor-law service. The guardians and their medical officers are still at loggerheads. Sir J. Acheson MacCullagh, M.D., senior medical inspector, Local Government Board, attended a special meeting of the guardians on Monday and urged a friendly settlement on the point of salaries. The doctors, at the request of the County Association and the Local Government Board, withdrew their resignations, while the guardians, in a manner regarded here as typical, refused to make any advance and declared that they had scored the first victory in the fight. The Irish Medical Association has taken up the matter, and the chances seem to be that a limit has at last been reached where medical men will no longer, as heretofore, submit to constant under-payment on the strength of the worn-out appeal to their humanity.

The Dental Hospital of Ireland during the Past Year.

The thirty-seventh annual general meeting of the members and subscribers of the Incorporated Dental Hospital of Ireland was held last week. The annual report stated that the total number of attendances was 17,238. In the conservation department there were 4871 operations, and of these 3536 were free. In the dispensary there were 4585 attendances, all free. 1575 of the 2388 extractions in this department had the benefit of local anæsthetics. 1802 general anæsthetics were administered, 721 of which were free. The prosthetic department supplied 18 dentures and did 20 repairs free for necessitous patients who were unable to make any contribution. The work record for the year was more satisfactory than the balance-sheet. On Sept. 30th, 1916, the balance due to the Ulster Bank stood at £1299 18*s.* 6*d.*, and the hospital enters the present year with that adverse balance increased by £425 2*s.* Subscriptions and donations, which were £384 10*s.* 2*d.* last year, amounted this year to £366 1*s.* 6*d*, and patients' contributions, which amounted last year to £822 18*s.*, were for this year £798 19*s.* 5*d.* The board has appealed for more generous support on the grounds that the greater part of the work done, amounting to 15,785 cases, was free work.

Dispensary Doctors of Military Age.

In the King's Bench Division, before the Lord Chief Justice, Mr. Justice Gibson, and Mr. Justice Kenny, the case of the King *v.* the Local Government Board came on for argument. The question for decision by the court was whether the Local Government Board were justified in refusing their sanction to the appointment by the guardians of the Lismore union of Mr. Thomas M. Cronin as medical officer of the Tallow, co. Waterford, dispensary district, because he was of military age and eligible for service in the Royal Army Medical Corps. The case had been argued some months ago, judgment was reserved, and it was now re-argued. Mr. M. J. Kenny, medical officer to the Tallow Dispensary, died early in the year. Three candidates, all of military age, answered the advertisements for his successor. Mr. Cronin was declared elected for the duration of the war. The Local Government Board refused to sanction the appointment on the grounds that Mr. Cronin was 26 years of age and eligible for the Royal Army Medical Corps and that the guardians were in a position to make other suitable arrangements to provide for the sick poor of the Tallow district. The guardians stated that they could make no suitable arrangements for the Tallow Dispensary, and guaranteed that if Mr. Cronin at any time offered his services to the Royal Army Medical Corps they would not hold him to his appointment. It was also contended on behalf of the guardians that the Local Government Board had no right to go outside the Poor-law to enforce conscription on medical men of military age. After further argument judgment was finally reserved.

Nov. 20th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Industrial Accidents Following War Wounds.

THE existing laws relating to industrial accidents have recently been modified in view of the fact that many of the workers are men who have been wounded and discharged from the Army. The new measure enacts that any ex-service man suffering from severe or incurable infirmity as a result of wounds or disease acquired on active service, who meets with an industrial accident after return to civil life, shall be

specially examined to ascertain if his accident is due in whole or part to his existing infirmity. In the former case his employer is exonerated from any liability for the pension granted to the victim or his heirs, and in the latter case from a proportion of his normal contribution. The pensions will be paid from the interest on a special disablement fund deposited with the national old age pensions fund under guarantee by the Ministry of Labour and financially administered by the Caisse des Depôts et Consignations. The modification should render it less difficult for discharged sailors and soldiers to find work in the factories than when the employer feared responsibility for accidents which he had good reason to assume would be more frequent in these ex-service men.

A New Artificial Leg.

Professor Amar, who is in charge of a laboratory at the School of Arts and Crafts devoted exclusively to the physiological study of working conditions, is well known for his work in analysing the movements of injured limbs by graphic methods. He recently presented to the Academy of Sciences a new form of artificial leg combining the pilon with the standard variety. The new leg weighs less than 2 kgs., is provided with joints at the knee and ankle, and is attached to the stump in a way which avoids the rubbing which often results from wearing a pilon. It is made of durable material capable of resisting the effects of perspiration and of inclement weather. By its use a normal gait is possible on the level, and even on an incline fatigue is reduced to a minimum. The addition of a gaiter makes the limb indistinguishable from one of flesh and bone. M. Amar supported his thesis by a demonstration of men walking freely with the new apparatus.

Condensed Milk in Acute Enteritis among Soldiers.

Dr. Lassablière has recently published a study of the results obtained from the use of condensed milk in the treatment of acute enteritis, a common condition among soldiers and apparently due to alimentary toxins combined with the direct affect of cold on the abdomen. The duration of symptoms is much reduced by feeding the patient exclusively on condensed milk diluted with four times its volume of rice water to the extent of 1–2 litres a day. The number of motions diminishes rapidly to the normal, while the discharge of mucus and blood ceases. With the usual diet of vegetable soup and milk, plus medicaments, the author finds the average duration of the disease to be 26 days, but with condensed milk, sweetened and not skimmed, the period is reduced to less than 15 days.

Cutaneous Origin of Streptococci in War Wounds.

It is becoming more and more certain that the streptococcus is the most dangerous agent of infection in gunshot wounds, whether acting alone or conveying an added virulence to the micro-organisms associated with it. Dr. Tissier has been able to show that any wound from which streptococci have been proved to be absent may, after simple irrigation, be safely reunited by first intention, whereas if streptococci are present drainage is indicated. MM. Levaditi and Delrez have gone a step further, and shown in a note read before the Academy of Sciences that the streptococcus, in common with other organisms infecting war wounds, has its origin in the skin of the wounded man, where it is present in health. These authors find a certain cutaneous flora common to groups of individuals, the transmission from one to another being favoured by the communal life in hutments. A group may be met with harbouring cultures of *B. perfringens*, another with Friedländer's bacillus, another with streptococci, and so on. They explain thus the fact that in the military units of a certain sector the wounds are richer in one particular organism than those of other units. The theory of carriers which has explained many peculiarities in the etiology of epidemic diseases may hold good also to explain the varieties of infection in war wounds. A typical example is furnished by the ambulance of La Panne, where the number of wounds infected with streptococcus rose from 19 per cent., which represented the proportion among the Belgian wounded in that sector, to 56 per cent., after the admission of British wounded. Streptococci were found in abundance on the skin of the latter. The authors believe, in fact, that the streptococcus is particularly prevalent among the British, accounting in this way for the assumed greater severity of scarlet fever in England.

Acute Poisoning by Arseniuretted Hydrogen on a Submarine.

Dr. Giardano has reported, in the crew of a submarine during submersion, acute symptoms of intoxication the cause of which could not be attributed to raised temperature or pressure, or to the lack of hygiene. After several hours' submersion the crew presented the following symptoms: nausea, vomiting, indefinable discomfort in the throat, metallic taste, intestinal colic with or without diarrhœa, headache, vertigo, and muscular weakness. Next day the symptoms were less marked, but there remained an icteric tint and tenderness on pressure over the liver, while the urine contained bile pigment and urobilin, the blood showing the anæmia of hæmolytic jaundice. Increased destruction of red cells was evidently present, due to a toxic cause. On close inquiry it was discovered that the cause of the occurrence was arseniuretted hydrogen arising from the accumulators during the submarine voyage. Arsenic was shown to be present in the asbestos separating the lead plates, and an analysis of the air in the submarine revealed traces of the highly toxic AsH_3. These facts should be borne in mind in the manufacture of accumulators intended for submarines.

Nov. 15th.

MEDICINE AND THE LAW.

Bowden v. *Bowden.*

IN the petition for divorce of Captain E. C. Bowden, R.A.M.C., recently heard by Mr. Justice Horridge, the issue depended upon a question of perennial medical interest—namely, the duration of pregnancy. The material facts, stated briefly, were as follows: On the night of Dec. 19th, 1915, sexual intercourse took place between the petitioner and respondent, but, according to the petitioner, under conditions which precluded the possibility of conception. On Dec. 20th the petitioner left for France, only returning some months later. The respondent, who had menstruated immediately before the intercourse, menstruated again in January, 1916, according to her own statement, while paying a visit to friends, and on Jan. 19th went to her father's house. The suggestion on the part of the petitioner was that at some time immediately before going to her father's house she committed adultery. On March 10th, 1916, she was operated upon for appendicitis and was then found to be pregnant, and when she informed her husband he asserted positively that she must be mistaken. On his return to England in June he was told that the child was expected in September. On Sept. 28th the respondent had a fall, for which she was treated in a nursing home at Worthing, where she remained until she was delivered normally on Oct. 22nd, 307 days after the date when her husband left England. For the petitioner, Dr. H. R. Spencer and Dr. W. S. A. Griffith gave evidence as to the normal period of gestation, as to cases under their observation in which this period was exceeded, or was stated to have been exceeded, according to the patient's calculations, and as to the probability of normal delivery of a child born at 10 months. Dr. F. Hinds gave evidence for the respondent with regard to the operation for appendicitis, and Mr. E. Davis testified as to his attendance upon her after her fall on Sept. 28th; he was of the opinion that labour had then begun but had been arrested. Dr. John Phillips, speaking as to prolonged gestation, cited instances of 298 days, 306 days, and 308 days respectively which had occurred in his experience. Mr. Justice Horridge declined to say that on the medical evidence given there was no case to answer, and the respondent went into the witness-box and denied absolutely that she had committed adultery. His Lordship, in giving judgment, dismissed the petition, stating that there were points in the respondent's conduct which were extraordinary after she learnt that she was pregnant, but that he accepted her testimony with regard to the marital relations of herself and her husband, and believed her story. He pointed out that the medical evidence admitted the possibility of a child being born at 307 days. The issue in this case was only of fact. The legal presumption is that a child born in wedlock is legitimate unless impossibility through non-access of the husband to the wife is proved, there being no evidence, other than the date at which the child was born, pointing to adultery on the part

of the wife. Mr. Justice Horridge's observation, which he is reported to have made before counsel addressed him on behalf of the petitioner, was quite beside any points raised in the case. According to the *Times*, he said that he "believed the respondent, and that, as he believed her, he cared more for her evidence than for that of all the doctors in the world." That is not the language which a judge should use concerning expert evidence given before him, while the respondent may rightly feel aggrieved that she should seem to have won her case through the disregard by the judge of medical evidence.

A Discharged Soldier as a Tramcar Driver.

After holding an inquiry into a tramway accident at Dover, Colonel Pringle, inspector under the Board of Trade, has stated in his report that the accident was due to the driver having failed to make proper use of the means at his disposal for stopping the car, and to his having "completely lost his head at the critical moment." He adds that the man in question had been discharged from the Army for nervous breakdown after 18 months' service in Egypt, and calls attention to the necessity for nerve and experience in drivers of tramway cars. He further points out that men discharged as unfit for military service through nervous breakdown are unlikely to prove suitable two months later as drivers on difficult routes, and that it would be wiser to close such routes than to place upon them drivers lacking the necessary experience. All medical men will agree with Colonel Pringle's view.

The Liability of a Farmer Selling Milk.

In a recent case decided by the Divisional Court, the court allowed the appeal of an inspector under the Food and Drugs Act for the borough of Hastings who had failed to secure a conviction before the magistrates at petty sessions. The appellant had taken samples from a churn containing milk sent by rail to Hastings by the defendant, a farmer, and had found it deficient under the Sale of Milk Regulations, 1901. It was found as a fact that the milk was put into the churn as it came from the cow, but the churn was not locked and there was no evidence to prove that it had been tampered with in transit. It was contended by the appellant that the presumption under the regulations that the milk was not genuine had not been rebutted by the respondent, as there was nothing to show what happened to the milk-churn on the journey, and that the respondent's liability did not cease until the arrival of the milk at the place of delivery. The justices considered that as the milk was genuine as it came from the cow when delivered to the railway company, the respondent was free from liability, and they declined to convict. In arguing on behalf of the appellant counsel called attention to the terms of the contract between the farmer and the milk-dealer whereby the property in the milk was not to pass until the churn reached Hastings Station. Mr. Justice Darling, in delivering judgment allowing the appeal, said that the case was absolutely concluded by the judgment in a case already decided—Parker *v.* Adler, 15 Law Times Reports 3; 1889, 1 Q.B. 20. The respondent was clearly liable to conviction, and if the authorities had been consulted the case would not have been stated.

DONATIONS AND BEQUESTS.—By the will of the late Mr. J. Isaac Jacobs the testator has bequeathed £5000 for hospitals and Jewish institutions, including the Swansea Hospital, and such hospitals as the executors may select at Cork and Passage West, and the Home and Hospital for Jewish Incurables, and to pay not less than 100 guineas to the Swansea Hospital.

CHRISTIAN FELLOWSHIP CLUB AS A MEMORIAL TO FALLEN STUDENTS.—On Nov. 26th the Student Movement House, 32, Russell-square, W.C., will be opened as a memorial to students who have fallen in the war, when the Archbishop of Canterbury, the Rev. Ivor J. Roberton, of Regent-square Presbyterian Church, and Miss W. A. Richardson, vice-principal of Westfield College, will take part in the ceremony. The house has been fitted up as a club where students of London, the largest college centre in the world, may meet for social and recreative amenities and where Christian fellowship may be generally promoted. It is pointed out by the secretary, Mr. Tissington Tatlow, that no religious test of any kind will be applied to members of the club nor will work of a proselytising character be permitted.

Correspondence.

"Audi alteram partem."

SUCCESS AND FAILURE IN THE TREATMENT OF TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—Dr. W. M. Crofton, of Dublin, has recently raised in your pages[1] a plea for prophylactic injection in the war against tuberculosis, basing his argument on the success recently attained in the Army by such means against the enteric fevers. This argument ignores the well-known principle that each disease must be dealt with according to its special nature and peculiar mode of propagation. A few instances may be quoted to illustrate this principle. Malaria is dealt with successfully by draining the breeding places of the mosquito, bubonic plague by destroying the rat, but neither of these methods would succeed against pneumonic plague, which must be prevented from spreading by isolating the patients and protecting by masks those who have to come into close contact with them. Hydrophobia has been suppressed by muzzling the dogs; and, lastly, typhoid itself, in the civil population, has been reduced to the status of an uncommon disease by sanitary engineering. Indeed, the success of sanitary engineering in this field was so great that it led at one time to the belief that it was the one and sovereign method for protecting the health of the people, and for a time there was little progress. But when the principle to which I have referred became recognised one success followed after another. Protective inoculation for tuberculosis therefore must claim no borrowed support but must stand on its own merits—if it has any. Let us, for a moment, consider what these are.

The inoculation of small laboratory animals with tuberculin and a host of other products of the tubercle bacillus has been going on for the last 30 years without much success, but, on the other hand, some quite demonstrable increase of resistance has been obtained in calves by the injection of living tubercle bacilli, human or bovine. Inoculated animals may even be able to resist the injection of large doses of bovine bacilli (50 mg.) which prove, almost without exception, fatal to control calves in a few weeks.[2] But the acquisition of this degree of resistance is uncertain, and, according to all authorities, not of long duration, lasting at most only a year, or perhaps two. Moreover, it has been shown that the bacilli may remain alive for considerable periods, may produce lesions in eyes or joints after a year or more,[3] and may even remain, in the case of heifer calves, latent in the mammary gland, and infect the milk when the calf has become a cow.[4] The injection of dead bacilli has not been followed by any marked increase of resistance. For these reasons protective inoculation of cattle has been discontinued.

This being so, it is pertinent to ask whether we are likely to produce by such means better results in man. Man is probably about as good a subject to immunise against tuberculosis as the ox. Both species are endowed by nature with a good deal of resisting power. Man, we now know, frequently becomes infected without developing progressive disease. The ox develops chronic tuberculosis which often makes so little difference to the animal's appearance that it seems to be perfectly healthy[5]; moreover, we know that we can inject it with small doses of living bovine bacilli without any serious result.[6] Man, therefore, is probably a good subject to immunise, but tuberculosis, it seems, is not a disease which confers much immunity. Moreover, man is at a great disadvantage as compared with the ox, inasmuch as there is no type of tubercle bacillus incapable of causing death or progressive disease in him as the human type of tubercle bacillus is incapable of causing such results in the calf. For this reason it could never be permissible to use in the case of man living cultures, as has been done, with the amount of success indicated, in the case of the ox. The injection of dead bacilli into experimental animals, as I have already said, has not been encouraging, and that any results worth having could be obtained from the use of minute doses of dissolved bacilli, such as Dr. Crofton recommends,[7] seems to the writer highly improbable; at all events, the method ought first to be proved effective on animals before it is applied on any considerable scale to human beings

Thus there would appear little reason to think that the application of protective inoculation to the prevention of tuberculosis would be of any use, even if it could be made without provoking the grave hostility of the people. That it has been found possible to apply antityphoid inoculation in the Army is because the soldier knows well from the experience of many of his fellows in India and South Africa the very grave risk from typhoid that he will have to face on active service, and—not least—because the Army consists of young men under military discipline. Even so, it was not carried through without much outcry; but it would be a very different sort of tune if any pressure were to be put upon the people to have their children inoculated against tuberculosis. It is only fair to Dr. Crofton to add that he never proposed any measure of compulsion, but I would ask him if he thinks any considerable amount of protective inoculation could be obtained without some form of compulsion?

The means for dealing prophylactically with tuberculosis appear to me to be threefold, and capable of classification under the three following heads:—(1) The amelioration of the conditions of life of the poor; (2) the cure of early cases; (3) the isolation of those who are acting as sources of infection.

The first of these means has been in action progressively for many years and is still going strong. The second has been worked by the great sanatorium movement initiated some ten years ago, and by the more recent tuberculosis dispensaries. If, regarded as a means of stamping-out tuberculosis, it has failed, it is because of the difficulty of getting hold of cases in the really early stages of infection, and one of the most promising of the many activities of our new tuberculosis officers would seem to be the hunting out of these early cases from among the contacts with persons who have recognised disease. The third method seems at last to be making headway, gradually, and in the face of considerable opposition. But the tide is flowing in its favour. It is the one method of the three which has not as yet been deliberately employed to any great extent, and it seems to me to contain the most promising germs of hope for the future.

I am, Sir, yours faithfully,

Cambridge, Nov. 11th, 1917. LOUIS COBBETT.

References.—1. THE LANCET, Oct. 27th, 1917, p. 657. 2. Roy. Comm on Tuberculosis, 1911, Fin Rep. App., vol iii., p. 266. 3. Tub. Arbeiten a.d. Kaiserl. Gesundheitsamte, 1912, Heft. xi. 4. A. S. Griffith: Jour. of Pathol. and Bacteriol., 1913, vol. xvii., p. 323. 5. McFadyean: Jour. of Comp. Pathol. and Therap., 1899, vol. xii., p. 269. 6. Cobbett: The Causes of Tuberculosis, p. 389. 7. THE LANCET, 1915, vol. i., p. 625.

PROPHYLAXIS IN VENEREAL DISEASE.

To the Editor of THE LANCET.

SIR,—The account given by Dr. G. Archdall Reid in his letter published in THE LANCET of Nov. 3rd is a contribution of much importance to the practical side of the prophylactic treatment of venereal infections. It indicates that the disinfectant power of a 1/2000 solution of permanganate of potash *used without delay* after exposure to infection is sufficient to kill the microbes of both syphilis and gonorrhœa before they penetrate the tissues. Dr. Reid infers from this that more elaborate and cumbersome methods are unnecessary *if disinfection be carried out immediately;* and says that injections into the urethra and calomel cream are in that case quite unnecessary.

The success, however, of the method of disinfection which he advocates depends on its *immediate* employment, and also on the healthy and unabraded condition of the genital organs; and it has been shown by Metchnikoff's experiments, at least in the case of syphilis, that even calomel ointment of 30 per cent. strength is not to be depended on for complete safety if used *later* than 12 hours after exposure, though it is to be thus trusted when used within 12 hours. Dr. Reid also implies that inunction and injection are necessarily more cumbersome and involve more delay than the use of the solution advised by him. He probably employs the words "immediately" and "without delay" in their literal sense: and thus a question might be raised as to the comparative practical value of disinfectant appliances, one of which *must* be used *immediately*, while the other *may* be used within 12 hours after exposure to infection. It is to be remembered also that the proper use of calomel ointment is effectual whether or no there is any abrasion of the skin or mucous membrane.

I am, Sir, yours faithfully,

London, Nov. 17th, 1917. H. BRYAN DONKIN.

INSANE SAILORS AND SOLDIERS.

To the Editor of THE LANCET.

SIR,—The letters of Dr. James F. Gemmel in THE LANCET for Oct. 20th, of Dr. R. H. Steen in THE LANCET for Oct. 27th, and of Dr. W. J. A. Erskine in THE LANCET for Nov. 17th, show the continually recurring tendency there is to criticise the arrangements made by the War Office in conjunction with the Board of Control for the care of those members of the fighting forces who have unfortunately suffered from a mental breakdown, but the real ground for these criticisms is far beyond, and is much wider than, the simple question of what fresh buildings can be erected or should be taken over—which really offer no solution to those in high authority, although they may be compelled to follow this course.

I am sorry to see in Dr. Gemmel's letter that he is apparently so unsympathetic—or, may I say, so un-democratic—as to classify his asylum patients dichotomously into paupers and criminals, and thus to reflect upon them purely accidental conditions for which they themselves are often not responsible and which in the main are so undeserved. In the view he adopts he overlooks the modern aspect of crime as the product of social circumstances rather than of atavistic or pathological defects; and have not our finest young fellows in the trenches and dug-outs shouldered the same burden and shared their risks side by side with Dr. Gemmel's despised classes, and are these classes, therefore, not entitled, for the sacrifices they have made and by moral right, to the deepest national gratitude? Indeed, one of the most comfortable and most efficient of our metropolitan hospitals is one in which these two types dwell harmoniously, and there are here no personal reflections such as are indulged in elsewhere, for one block is devoted to the soldier, whilst the others are at the service of those patients who are precisely of the class whom misfortune of another kind has compelled to seek a shelter in the asylum.

If our asylums are good enough for the soldier's father and mother, sisters, and other relatives, it is surely unjust, if not cruel, to deprive our sick sailors and soldiers of equal privileges; if they are not, then it is hypocrisy to pretend to persuade ourselves that we are doing our best for their relatives, and those engaged in the work should withdraw if they have any sense of shame. As to the stigma of pauperism, it is a well-known fact of experience that our public asylums are being more and more appreciated by the middle and lower middle classes as the best homes of recovery for cases of mental illness. In fact, at Claybury, I had repeated applications to receive as patients those whose friends desired them to be under treatment at much higher rates than could be officially charged, and who in consequence had to be refused.

No one thought that the war would last so long as it has done, but everybody felt from the very commencement of hostilities that those who voluntarily offered their lives to defend human brotherhood, social justice, and our liberty should receive every personal and generous recognition as well as every medical and nursing care that the best skill could offer to them; and if the Bill which the Medico-Legal Society had drafted, and which was carried through its first reading in the House of Lords just before the war, could have been proceeded with, we should have heard nothing of the unsatisfactory treatment of our sailors and soldiers who had suffered a mental breakdown, nor of the cheap cant about the stigma imparted by asylums, asylum doctors, and asylum nurses—all of which is gradually dying out now that the value of asylums, which are hospitals of restoration as well as homes of care, and of asylum treatment is becoming more recognised and their methods more often adopted for all functional mental conditions.

I intend to propose at the next meeting of the Parliamentary Committee of the Medico-Psychological Association of Great Britain and Ireland, which is to meet on Nov. 27th, that there should be legal power (duly safeguarded) to treat all cases of mental breakdown for a period of six months without certification, an arrangement which Dr. George M. Robertson informs me is working admirably in Scotland, and I shall be glad to receive any comments from your readers.

I am, Sir, yours faithfully,

ROBERT ARMSTRONG-JONES, M.D.

106, Harley-street, Nov. 20th, 1917.

TREATMENT OF WAR NEUROSES.

To the Editor of THE LANCET.

SIR,—Your Parliamentary correspondent reports the reply of Mr. Macpherson to Colonel Clive with respect to the treatment of shell-shock patients in London. All familiar with the circumstances will be glad to read Mr. Macpherson's admission that it may be possible to discontinue the neurological centre in London as a treatment centre.

A large conference of neurologists recently met at the War Office. I have reason to know this, as they unanimously rejected a scheme in which I am interested, in spite of the fact that the Director-General and the neurological adviser of the A.M.S. had both agreed to give it a trial, and the President of the Special Medical Board had expressed himself as optimistic concerning its success.

My scheme, now known as the "Country Host Institution," was originally intended for the benefit of pensioners and the Ministry of Pensions and London War Pensions Committee have sanctioned it experimentally to the extent of 30 cases. Half that number of pensioners have already been sent off and the early reports are very satisfactory.

As the public response to my request for "hosts" was instantaneous and widespread, I had some hundreds to spare and offered these to the War Office, so that some of the undischarged men suffering from war neuroses might also benefit. It is this offer which the conference refused. The principles of the scheme were as follows:—

The patient will be surrounded with a healthy instead of a neurotic subconscious influence. He will be removed from the harmful sympathy of friends and from the noise and rush of town life, to the kind but firm care of his "host" and the fresh air and peace of the country, where he can be encouraged to perform a small but increasing amount of simple work.

In order to carry out this treatment it is suggested that:—

1. Certain mild cases of "shell shock" and war neurasthenia shall be selected for treatment singly at country places where suitable accommodation has been offered by landowners, farmers, gardeners, &c.
2. The patient shall be billeted on the "host" upon the usual terms (3*s.* per diem), and shall perform appropriate work, according to directions communicated to the "host" by the medical officer in charge.
3. Pay, separation allowances, &c., shall be the same as if the soldier were in hospital.
4. Even when cured the patient shall not be called upon to perform military service abroad, but it is confidently hoped that he may be made fit for home service.
5. Patients shall be visited at stated intervals, by the medical officer under whose care they are, and in case of illness may be transferred to the nearest military hospital.
6. Complaints may be sent either by the patient or by the "host," to the medical officer in charge of the scheme.
7. The cases shall be selected by the medical officers of the Neurological Section of the 4th London General Hospital, acting in consultation with the medical officer of the scheme.

I am informed that the conference which threw out my scheme has decided in favour of opening a series of hospitals containing a large number of beds, and seme of these will probably be in urban centres for convenience of management and transport. I sincerely hope that the conference may yet consider my scheme, for I have every reason to believe that the patriotic hosts on whom its success must depend could be found in very large numbers.

Medical experience and common sense agree that (1) country life and conditions tend more towards the cure of neuroses than the noise and rush of towns, and that (2) nervousness is extremely communicable. If these premisses are admitted a very little thought should be sufficient to convince every unbiassed person, whether neurologist or layman, that it is wrong to congregate nerve-shattered men in hospitals, unless the severity of their symptoms renders it unavoidable, and that it is unpardonable to keep even those serious cases in a town, especially in London where air raids are frequent.

It seems obvious that, however convenient for the authorities, it is exceedingly harmful to the men that they should be congregated, the mild along with the severe, and perhaps within an air-raid area. The following extract from a letter sent me by Archdeacon Dray will give an experienced eye-witness's impression of the effect of air-raids on nerve-shattered men:—

"Last night we had a repetition of former experiences in these —— schools, where 200 men in varying stages of helplessness act and react upon each other day by day, and during the raids are nearly frantic with terror, numbers of them writhing under their beds or falling back into their former palsied condition, their eyes transfixed and their twitching faces wearing a look of abject horror. It is pitiful to hear their repeated appeals: 'Why can't I go into the country, somewhere where it is quiet and restful? Is a man who has gone through what we had at the front to be kept in this hell until he loses his reason,' &c. The nurses are simply splendid in their calm bravery, but I seriously wonder how long some of them can stand the spectacles presented," &c.

The ideal treatment, for all the milder cases at any rate, is to send them singly to the country, where they may recuperate in peace and quietness, performing suitable tasks in the open air and with healthy mental influences round them. The Country Host Institution could send over 200 men to excellent country houses within a week or two. Yet the authorities, who consider it wise to allow the men out into the London streets, refuse to send them to gardens and farms where they would be under supervision.

It will very greatly further the views expressed above if any medical men who are in sympathy with them will communicate with me.

I am, Sir, yours faithfully,

13, South Eaton Place, Belgrave-square, S.W. 1, Nov. 19th, 1917. THOMAS LUMSDEN.

SIR RICHARD CROFT AND THE CASE OF THE PRINCESS CHARLOTTE.

To the Editor of THE LANCET.

SIR,—The annotation entitled "The Vindication of a Medical Reputation" in your issue of Oct. 27th hardly does justice to Sir Richard Croft. As the son-in-law and successor of Denman, who was the leader in obstetric medicine in London, and one of the best and most cultured of men, it may be safely concluded that Croft would have the fullest midwifery training then available. British obstetric science was already a great tradition, coming down from Douglas, Smellie, and William Hunter (who, by the way, attended with a midwife the queen of George III.), and training in that department by lectures and clinical work was given by Denman and others, although it had not yet taken its place alongside of other departments of medicine in university and collegiate courses. Wadd in 1824 states that Sir R. Croft had the degree of M.D., "possessed much practical knowledge," and "for thirty years continued to practise with the highest credit and success." Brodie, writing long afterwards, in 1865, speaks of Croft's "great reputation," and that he was "a man of acute feelings, a thorough gentleman, having a high sense of honour, and of a kind and liberal disposition."

As regards the case of the Princess Charlotte in 1817, the letters quoted in Playfair's "Midwifery" may be supplemented by Dr. Matthew Baillie's own account of the occurrence. It is taken from a manuscript letter which has been preserved, addressed to the Princess's mother, and those who know Baillie's absolute candour of mind and character will attach the more value to his words. He writes:—

"This sad event has not arisen from any error in the treatment of her case. The Princess had enjoyed more than her usual health previous to her labour. The labour was exceedingly tedious, for it lasted 50 hours, but it was attended with no unusual circumstances, except a slight contraction of the womb, retarding the passing away of the after-birth. The Princess was well for more than three hours after the labour. She was suddenly seized with uneasiness in her chest, great difficulty of breathing, extreme restlessness, and a very rapid, feeble, and irregular pulse. Sir Richard Croft, Dr. Sims, and myself endeavoured to support her sinking frame with every kind of cordial, ... but the Princess died in two hours from the beginning of the attack. Sir Richard Croft was indefatigable in his attention and zeal throughout the whole of this very sad business. He never quitted for more than a few minutes at a time the bedchamber of the Princess from the beginning of her labour until she expired. The child was a male, well formed, and stillborn. ..... About a pint of coagulated blood was found by examination in the womb and two ounces of water were found in the bag surrounding the heart. These may in some measure account for the fatal event."

The details given in this report confirm Playfair's inference that the cause of death was pulmonary embolism, then unknown. Embolism, it may be remembered, was only discovered by Kirkes and Virchow a generation later.

I am, Sir, yours faithfully,

Devonshire-place, W., Nov. 14th, 1917. R. HINGSTON FOX.

Mr. Colston Wintle, L.R.C.P., M.R.C.S., has been elected for the fourteenth year chairman of the health committee of the Bristol town council.

Dr. Barclay Baron, lately Lord Mayor of Bristol, has received the insignia of the Russian Red Cross Order for his successful work as president of the Bristol Russian Red Cross Fund.

The War.

THE CASUALTY LIST.

THE following names of medical officers appear among the casualties announced since our last issue :—

Killed.

Capt. J. F. Russell, M.C., R.A.M.C., attached Royal Welsh Fusiliers, received his medical education at the Middlesex Hospital, London, and qualified in 1916, whereupon he joined up. The award of the M.C. was recorded in THE LANCET of August 25th, 1917, p. 332.
Capt. E. Phillips, R.A.M.C.

Died.

Lieut. H. F. Ransome, R.A.M.C., was educated at the Owens College, Manchester, and at St. George's Hospital, London, and qualified in 1892. He was in practice at Bowdon, Altrincham, where he was surgeon to the local hospital, and since joining the R.A.M.C. was in charge of Queen Mary's Military Hospital at Whalley, where he died.
Lieut. G. Taylor, R.A.M.C.

Wounded.

Capt. H. G. Rice, R.A.M.C., attached Durham Light Infantry.
Capt. H. W. Gush, R.A.M.C.
Major W. Bapty, Canadian A.M.C.
Capt. H. F. Dunstan, Australian A.M.C.
Major A. V. Meehan, Australian A.M.C.
Capt. G. D. Eccles, R.A.M.C.
Capt. W. Harmens, R.A.M.C., attached Cheshire Regt.
Capt. D. G. Kennard, R.A.M.C., attached Yeomanry.
Capt. G. Sutherland, R.A.M.C., attached Scottish Rifles.
Lieut. J. Avery, R.A.M.C., attached Essex Regt.
Capt. J. Young, R.A.M.C., attached Durham Light Infantry.
Capt. O. J. Ellis, Australian A.M.C.
Capt. R. M. Thomson, Australian A.M.C.
Capt. C. G. Brentnall, R.A.M.C., attd. Lancashire Fusiliers.

CASUALTIES AMONG THE SONS OF MEDICAL MEN.

The following additional casualties among the sons of medical men are reported :—

Lieut. T. H. W. Waller, Gloucestershire Regiment, killed in action, only son of Dr. A. W. Waller, of Stroud, Gloucestershire.
Capt. D. D. A. Anderson-Berry, Royal Scots Regiment, killed in action, only son of Dr. D. Anderson-Berry, of Highgate, London, N.
Capt. J. F. Russell, M.C., R.A.M.C., attached Royal Welsh Fusiliers, killed in action, eldest son of Dr. W. F. Russell, of Holyhead.
Lieut. V. W. Bennett, Royal Engineers, killed in action, eldest son of Lieut.-Col. V. B. Bennett, I.M.S.
Private C. E. L. Cox, Canadian Infantry, killed in action, eldest son of Dr. A. E. Cox, of Grange-over-Sands, and late of Southport.
Lieut. G. L. Brown, Loyal North Lancashire Regiment, killed in action, youngest son of Dr. A. Brown, of Hatch End, Middlesex.
Second Lieut. S. G. Cunningham, Royal Field Artillery, killed in action, youngest son of Dr. J. Cunningham, of Campbeltown, Argyllshire.

THE HONOURS LIST.

The following awards to medical officers are announced. The acts of gallantry for which the awards were made are not yet announced. All are members of the R.A.M.C. unless otherwise stated. The dates in parentheses, in those cases where bars have been awarded, refer to the number of THE LANCET in which a record of the original decoration will be found :—

Distinguished Service Order.

Temp. Capt. G. W. Armstrong; Major S. V. Appleyard, Australian A.M.C.; Major W. W. S. Johnston, M.C., Australian A.M.C.

Bar to the Military Cross.

Capt. W. McM. Chesney, M.C. (June 26th, 1915, p. 1373); Temp. Capt. R. W. Hogg, M.C. (Dec. 16th, 1916, p. 1034); Temp. Capt. H. F. Wilson, M.C. (Oct. 6th, 1917, p. 550); Temp. Capt. M. B. Lawrie, M.C., South African M.C. (August 4th, 1917, p. 176).

Military Cross.

Capt. B. G. Beveridge; Capt. V. C. Brown, Australian A.M.C.; Temp. Capt. D. S. Cassidy, Lt., Canadian A.M.C.; Capt. G. Eustace; Capt. F. G. Harper; Temp. Capt. J. Jack; Capt. C. H. Kellaway, Australian A.M.C.; Capt. H. H. Leeson; Temp. Capt. P. M. MacLachlan, Capt. J. S. McConnachie; Capt. P. J. F. O'Shea, Australian A.M.C.; Temp. Capt. A. W. Young.]

FOREIGN DECORATIONS.

Italian.

Silver Medal for Military Valour—Deputy Surg.-Gen. O. W. Andrews, R.N.; Fleet-Surg. G. E. Duncan, R.N.

OBITUARY OF THE WAR.

JOSEPH PATRICK PEGUM, L., L.M. R.C.P.S. IREL.,

CAPTAIN, ROYAL ARMY MEDICAL CORPS.

Captain J. P. Pegum, who was killed in action on Sept. 26th at the age of 25 years, was youngest son of the late James Pegum, of Glin, co. Limerick. He was educated at Mungret and Clongowes Wood Colleges, studying medicine at the Royal College of Surgeons in Ireland, where he belonged to the Officers' Training Corps. He qualified in April, 1916, and was immediately given a commission in the R.A.M.C., becoming attached to the King's Shropshire Light Infantry. After working for long under conditions of great danger and difficulty he was killed by the explosion of a shell. Captain Pegum was a keen sportsman, excelling at cricket, lawn-tennis, fishing, and shooting. His superior officer writes of him as a splendid battalion medical officer and one whose loss was keenly felt.

JAMES HARCOURT CECIL GATCHELL, L.A.H. DUB.,

MILITARY CROSS,
CAPTAIN, ROYAL ARMY MEDICAL CORPS.

Captain J. H. C. Gatchell, who was killed in action on Sept. 27th, was youngest son of Rev. J. H. Gatchell, D.D., rector of Earlsgift, co. Tyrone. After qualifying in 1912 he made several voyages as ship's surgeon to the Elder Dempster Line, being present at the taking of Derala by the British. Joining the R.A.M.C. in 1915, he was attached to the Lancaster and later to the Sussex Regiment, earning his Military Cross in August last. The award runs : "He worked for many hours in the open under shell-fire, frequently dressing men on the spot where they were hit. He worked unceasingly for 16 hours without food. His aid-post was blown in and he was wounded, but he refused to go down to the dressing-station till ordered to do so by his commanding officer." He was killed by a shell two months later while he was again dressing cases in the open. Fellow-officers write of Captain Gatchell's unfailing cheerfulness amid all the circumstances of trench life.

THE Albert Medal has been awarded to Surgeon Probationer Robert Sydney Steele Smith, R.N.V.R., for services rendered by him as medical officer on a torpedoed ship.

TRURO NAVAL HOSPITAL.—The Admiralty Medical Department has requested the authorities of the Truro Naval Auxiliary Hospital to provide additional accommodation for 50 patients, and it has been decided to do so.

Obituary.

GEORGE BROWN, M.R.C.S. ENG., L.S.A.,

LATE DIRECT REPRESENTATIVE FOR ENGLAND AND WALES ON THE GENERAL MEDICAL COUNCIL.

WE regret to announce the death of Mr. George Brown, who died at his residence in Exeter on Nov. 15th, in the seventy-third year of his age.

George Brown was born at Callington, Cornwall, and received his professional education at the medical school of Charing Cross Hospital, where he was both a scholar and medalist. After holding the usual resident appointments at the hospital, and being for a time demonstrator of anatomy in the school, he entered general practice in the north of London, and during that period became a prominent representative of the advanced reform party in the medical profession. He was a forceful public speaker and vigorous writer, and was prepared to exercise his talents on behalf of the general practitioner anywhere and at any time. The inclusive nature of his advocacy prevented him from securing the power for good that might have been his had he directed his reforming energies more to particular abuses, and had he been less perfectly convinced that all the consultant section of the profession were leagued against the general body.

In 1897 he got his chance as a reformer, for he became a direct representative for England and Wales on the General Medical Council. He owed his success at the election largely to a promise made to the constituency in his election address that he would oppose the impending legislation which shortly afterwards materialised into the present Midwives Act, the election turning almost exclusively upon a question which, deeply as it affected the interests of the medical profession, had already passed out of the sphere of the General Medical Council. For ten years he was a member of the Council, but neither his style of speaking nor the matter of his speeches exercised much influence on the opinions of that body—his onslaughts were too vague, his criticisms too general, and his remedies too crude. But those most opposed to his methods or at variance with his theories recognised in him an enthusiast for the cause of right as he conceived it.

Some 15 years ago George Brown retired from practice in London, which had become arduous to him in a damaged condition of health, and returned to his native town of Callington, where he was at work when the war broke out. In 1915 he went to Exeter and became honorary physician to the Exeter Dispensary. In the spring of this year he was injured in a street accident and had remained in bad health until he died.

George Brown worked hard all his life, and if he realised some only of his ambitions it must be remembered that those ambitions were large and ill-defined. But what he was able to perform was all to the good. He wrote a good many pamphlets on medical subjects and two small books, "Aids to Anatomy" and "Aids to Surgery," which at their date were found useful to many students. He was editor of the *Medical Times*. He married late in life and leaves a widow and one young son, to whom we offer our real sympathy.

JAMES HYSLOP, M.B., C.M. EDIN., D.S.O.,

LIEUTENANT-COLONEL, S.A.M.C.

Lieutenant-Colonel J. Hyslop, of the South African Medical Corps, died at the Sanatorium, Pietermaritzburg, on Oct. 5th, at the age of 61. He was born in Kirkcudbrightshire and educated at Hutton Hall and at Edinburgh University, where he graduated M.B., C.M. in 1879. After studying at Berlin, Vienna, and Munich, he took up appointments at the Border Counties Asylum at Melrose and at the Morningside Asylum, Edinburgh, and subsequently went to South Africa, where, in 1882, he was appointed medical superintendent of the Natal Government Asylum, Pietermaritzburg, now known as the Natal Mental Hospital. From this post he retired two years ago, after holding it for 33 years. Colonel Hyslop served with the Natal forces in the Boer War, and for his services was awarded the D.S.O. Some 18 months ago he took over the duties of Director of Medical Services at the Durban base, but his health breaking down he returned to Pietermaritzburg, where he died, the immediate cause of his death being pleurisy and pneumonia. Colonel Hyslop, who was president of the Natal Medical Council, was the Natal delegate to the Victoria Plague Conference in 1899 and chairman of the Durban Plague Conference held in the same year. He was the author of a work dealing with the anatomy of the central nervous system.

EDMUND FREDERICK TANNEY PRICE, M.B., C.M. EDIN.,

RADIOLOGIST TO CHALMERS' HOSPITAL, EDINBURGH.

THE death of Dr. Elmund Price occurred on Oct. 27th under somewhat tragic circumstances. He was, indeed, one of the many instances in these times of a man sacrificing his life at the call of duty, for in the middle of a full professional career, in which there was small opportunity for leisure, Dr. Price, at the age of 54, joined the 1st Battalion City of Edinburgh Volunteers when it was inaugurated, with them drilled regularly, sometimes standing guard all night, and it was while attending manœuvres with his battalion that he met his untimely death.

Elmund Price belonged to a medical family, for his father, Dr. A. G. Price, was a civil surgeon in the Indian Medical Service, four brothers were medical men, and he is survived by—besides his widow and a married daughter—three sons, two of whom are qualified and serving in His Majesty's forces, while the third is a medical student. Born in India 55 years ago, he received his early education there and came to Edinburgh University later. Graduating in 1884, he at once went into general practice, and for 22 years was well known and highly esteemed as a successful physician in Edinburgh. During that period he obtained a wide knowledge of his profession and amassed a large amount of clinical material which was to stand him in good stead when he took up X ray work. This had been attracting his attention for the last few years that he was in general practice, and in 1906 he determined to specialise in the subject.

As a radiographer he immediately found a new sphere of usefulness, and his work was quickly recognised to be of a very high order. He was skilful and painstaking. He made a careful study both of the anatomical and clinical aspects of his specialty, and, moreover, took the opportunity, whenever possible, of being present at the operations on patients whom he had X rayed. By these means he acquired great experience in the interpretation of his plates, so that the profession came to value his opinion and to appreciate the assistance he was able to render them. His caution in not being led into reading more in his plates than was warranted gave him a well-earned reputation as a trustworthy expert witness. With regard to the therapeutical side of his specialty, Dr. Price quite recognised its limitations, and this attitude served still further to gain for him the confidence of the profession. In 1907 he was appointed radiologist to Chalmers' Hospital and that appointment he held till the time of his death. He was a member of the Obstetrical Society, the Edinburgh Medico-Chirurgical Society, and the Royal Society of Medicine. Among his contributions to the literature of radiology was a paper, published in 1911, on "The Diagnosis of Urinary Calculi by means of the X Rays," and an important article published in the *Edinburgh Medical Journal* in 1914, entitled "The Röntgen Ray and Bismuth Meal Method as an Aid in the Diagnosis of some Alimentary Diseases." In addition he contributed the X ray illustrations of the "Manual of Surgical Anatomy" (Beesley and Johnston).

Dr. Price's life was too fully occupied by his professional work to allow of much time for other outlets for his energetic nature, but two things appealed to him strongly—namely, ambulance work and volunteering. He was, since 1888, a successful lecturer and examiner under the St. Andrew's Ambulance Association and did excellent work in this connexion: while his association with the Volunteers dates back to the time when, as a student, he joined the 4th Battalion Royal Scots.

A FOOD ECONOMY SERMON.—In accordance with a proposal by Sir Arthur K. Yapp, Director of Food Economy, the Bishop of London will preach a special food economy sermon on behalf of the League of National Safety at St. Paul's Cathedral, on Sunday next, Nov. 25th.

Medical News.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At a Comitia of the Royal College of Physicians on Oct. 25th, and a Council meeting of the Royal College of Surgeons on Nov. 8th, diplomas of L.R.C.P. and M.R.C.S. were respectively conferred upon the following candidates (including seven ladies), who have passed the Final Examination in Medicine, Surgery, and Midwifery of the Conjoint Board, and have complied with the necessary by-laws:—

Aseyy Ahmed, London Hospital; Edwin Baylis Ash, Birmingham University; Ruth Balfour, Royal Free Hospital; Noel Arthur Hamilton Barlow, Guy's Hospital; George Edmondson Birkett, Cambridge and Manchester Universities; John Anthony Birrell, University College, Cardiff, and St. George's Hospital; Anthony Blackstock, King's College Hospital; Numa Sylla Bonard, Geneva University; Geoffrey Bourne, St. Bartholomew's Hospital; John Walker Brash, St. Mary's Hospital; Arthur Bulkeley, Guy's Hospital; Horace Braithwaite Bullen, Cambridge University and St. Bartholomew's Hospital; Finlay Cameron, Charing Cross Hospital; William Arnold Clements, Birmingham University; Bernard Stanley Collings, University College Hospital; Julien David Constantin, St. Bartholomew's Hospital; George Wilfred Coombes, London Hospital; John Rudolph Cox, Guy's Hospital; Eustace Henry Taylor Cummings, Liverpool University; Dennis Reginald Curnock, Charing Cross Hospital; William Leslie Dandridge, Cambridge University and St. Bartholomew's Hospital; Hari Das, Calcutta University and University College Hospital; Thomas Davies, University College, Cardiff, and University College Hospital; Leslie Perkins de Abrew, Ceylon Medical College and London Hospital; Bartholomew Gidley Derry, Bristol University; Wilton Lionel de Silva, Liverpool University; James Douglas Dimock, Sheffield University and Middlesex Hospital; John Stanley Ellis, Cambridge University and Guy's Hospital; Maximilian Walter Geffen, University College Hospital; Satyapriya Ghosh, Calcutta University and Royal Free Hospital; Edward Austin Gibb, Cambridge University and St. Thomas's Hospital; Johan Coenraad Gie, Guy's Hospital; *Charles Hawkins Gilmour, Toronto University and Middlesex Hospital; Lionel Charles Goument, St. Bartholomew's Hospital; Lilian Maud Griffiths, University College, Cardiff, and Royal Free Hospital; Douglas Vernon Halstead and Eric Clark Hinde, Guy's Hospital; Wilhelm Otto Holst, Middlesex Hospital; Percy Gilbert Horsburgh, St. Bartholomew's Hospital; *Reginald Hunter, Durham University; John Wilkinson Davis Hyde, University College Hospital; Clifford Venning Isard, St. Thomas's Hospital; Thomas Glyn James and Naunton Reginald Jenkins, University College, Cardiff, and Westminster Hospital; Montagu Horace Jupe, Cambridge University and London Hospital; Nat Kamchorn, Guy's Hospital; David John Adams Lewis, London Hospital; Emily Catherine Lewis, Royal Free Hospital; Thomas Parry Lloyd, London Hospital; Alice Lloyd Lloyd-Williams, Royal Free and St. Mary's Hospitals; Albert Victor Lones, St. Bartholomew's Hospital; James Galway McCann, St. Thomas's Hospital; Joseph Sydney Matthews, London and University College Hospitals; Leslie Clifford Moore, Liverpool University and St. Thomas's Hospital; Arthur Harry Morris, Bristol University; William Percival Nelson, Birmingham University; Joseph Warren McKillop Nicholl, Cambridge University and Middlesex Hospital; William Drew Nicol, St. Bartholomew's Hospital; Francis Crawford Odling, Cambridge University and St. Thomas's Hospital; David Forsyth Panton, London Hospital; Christopher Stanley Parker and Reuben Woodland Payne, Charing Cross Hospital; Charles Farrell Rainer, London Hospital; Hallock Ratnarajah, Ceylon Medical College and St. Mary's Hospital; Frank Neon Reynolds, St. Thomas's Hospital; Herbert Eyton Rhodes, Cambridge University and London Hospital; Helen Roth, Birmingham University; Henry Bret Russell, St. Thomas's Hospital, Khan Sahib, St. Thomas's Hospital; John James Savage, Oxford University and St. Bartholomew's Hospital; Simeon Cyril Shaw, Middlesex Hospital; Cuthbert Shaw-Crisp, St. Mary's Hospital; Charles Ernest Alan Shepherd, St. George's Hospital; Charlotte Annie Shields, Royal Free Hospital; Maurice Oliver Simpson, Middlesex Hospital; Ram Sinha, London Hospital; Basil Lyndon Skeggs, St. Bartholomew's Hospital; Robert Cyril Wilmer Staley, Guy's Hospital; Harmon Taylor, Liverpool University; Harold George Taylor, Cambridge University and St. George's Hospital; Oswald Stuart Thompson, Cambridge University and St. Thomas's Hospital; John Ferdinand Twort, London Hospital; Percy Ward, Sheffield University; Charles Horne Warner, Middlesex Hospital; Arthur William Wells, London Hospital; Arthur Winfield, Cambridge and Liverpool Universities; Keith Montague Cumberlege Woodruff, Guy's Hospital; and Ephraim Benjamin Woolf and Israel Hyman Zertman, London Hospital.

* M.R.C.S. granted Oct. 11th last.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The annual meeting of the Fellows and Members of the College was summoned for 3 o'clock on Thursday, Nov. 15th, but when the senior Vice-President, Mr. Charters J. Symonds, took the chair only some 15 Fellows and Members were present, though the quorum is 30. When a quarter of an hour had elapsed and still those present had not reached the required number, the Vice-President declared that as a quorum had not attended it was his duty to state that the meeting could not be held. Last year no quorum was present, but an informal discussion was held on the annual report of the Council. It had been suggested that no meeting should be summoned this year as so many of the Fellows and Members of the College are serving in the Army and Navy; and, indeed, the Society of Members advised the Council not to have the meeting, but after discussion it was resolved that an attempt should be made. As the event has shown, it has proved a failure. While the meeting was waiting the necessary 15 minutes a Member present asked the chairman whether the members of Council present were counted in the total, and he was told that the two members of the Council who were present were included.—At the Primary Examination in Anatomy and Physiology for the Fellowship held on Nov. 7th, 8th, and 13th, for which 25 candidates presented themselves, 12 candidates (including four ladies) were successful and 13 were rejected. The following are the names and schools of the successful candidates:—

Michael Waldo Boone Bulman, London Hospital; Rustam Nusserwanji Cooper, Bombay University and Middlesex Hospital; Hilda Treloggen Haggett and Edith May Hall, London School of Medicine for Women; Henry Lewis Heimann, University College and Middlesex Hospital; Oscar Stanley Hillman, Middlesex Hospital; Charles Melton Ockwell, Guy's Hospital; Dorothy Pantin, London School of Medicine for Women; Robert Lindsay Rea, Queen's University, Belfast, and Middlesex Hospital; Esther Rickards, London School of Medicine for Women; William George Dismore Upjohn, Melbourne University and Middlesex Hospital; and John Whittingdale, Cambridge University and St. Bartholomew's Hospital.

UNIVERSITY OF LONDON.—At examinations held recently the following candidates were successful:—

THIRD (M.B., B.S.) EXAMINATION FOR MEDICAL DEGREES.

Arthur Lawrence Abel, University College Hospital; Frank Macdonald Allchin, Westminster Hospital; Hannah Katherine Alton, London School of Medicine for Women; Elizabeth Labrey Ashby, University of Birmingham; Robert Townly Bailey, Charing Cross Hospital; Marjorie Ada Blandy, London School of Medicine for Women; Marian Noel Bostock, St. George's Hospital and London School of Medicine for Women; Margaret Stote Glen Bott, London School of Medicine for Women; Francis Caldecott, Guy's Hospital; Hari Das, University College Hospital; Thomas Anwyl Davies, St. Thomas's Hospital; Phillis Decima Dixon, London School of Medicine for Women; William Henry Dupré, St. Bartholomew's Hospital; Kenneth Reed Hill, University College Hospital; Bertha Hinde (honours, distinguished in Surgery), London School of Medicine for Women; Harry Mainwaring Hoet, University of Leeds; Henry Cecil Jennings, St. Thomas's Hospital; William Arthur Edward Karunaratne, University College Hospital; Walter Henry Lloyd, Middlesex Hospital; Bruce Maclean, University College Hospital; Sinnethamby Muttiah, London Hospital; Martin Herbert Oltershaw, University College Hospital; Noel Olivier, London School of Medicine for Women; Alexander Edward Patrick Parker (honours, distinguished in Medicine and Surgery) (University Medal), Westminster Hospital; Mariamne Olive Ramsay, London School of Medicine for Women; Cedric Sydney Lane Roberts, Guy's Hospital; Kenneth Mackinnon Ross, London Hospital; Henry Rowan and Morris Schwartz, University College Hospital; Simeon Cyril Shaw, Middlesex Hospital; Ellen Sylk, London School of Medicine for Women, and Charles Horne Warner and Ralph Edwin Stuart Webb, Middlesex Hospital.

The following candidates have passed in one of the two groups of subjects:—

Group I.—Ruth Balfour, London School of Medicine for Women; Guy William John Bousfield, St. Thomas's Hospital; Percy Selwyn Clarke, St. Bartholomew's Hospital; Humphrey Leonard George Foxell, University College Hospital; Blanche Aspasie Marion Henderson, Victoria University of Manchester and Charing Cross Hospital; Claude Herbert Marshall, Guy's Hospital; Marie Matilda Alice Moralt, London School of Medicine for Women; Alan Selby-Green, Middlesex Hospital; Aubrey Leonard Telling, University of Leeds; and James de Silva Wijeyeratne, University College Hospital.

Group II.—Frank Percy Bennett, St. Mary's Hospital; Lionel Bernard Goldschmidt, King's College Hospital; David John Adams Lewis, London Hospital; William Leslie Thomas, Middlesex Hospital; and Naomi Tribe, London School of Medicine for Women.

B.S. EXAMINATION (*For Students who graduated in Medicine in or before May, 1904*).

Henry Harold Greenwood (honours), University of Leeds.

EXHIBITION OF ARTS AND HANDICRAFTS.—The Exhibition of Arts and Handicrafts which has recently been held at the Central Hall, Westminster, showed by a useful and artistic display that village industries have by no means died out, and demonstrated the possibilities of accelerating their revival as a means of helping our crippled sailors and soldiers. There were instructive exhibits of handweaving, stained glass, pottery, embroidery, lace, metalwork, bookbinding, basket-work, and so forth, by both individual exhibitors and societies, the latter including the National Institute for the Blind, which is doing so much at the present moment for blinded sailors and soldiers, the Wych School for the Deaf, Hampstead, N.W. (after Christmas the institution will remove to Haslemere), and the Barclay Workshop for Blind Women, Edgware-road. Specimens of the work done by members of the interned Naval Brigade in Holland and by the blinded sailors and soldiers at St. Dunstan's Hostel were of particular interest, as were also the models of the Maternity and Nursing Departments at the Royal Free Hospital, which had been mainly constructed by the sailor and soldier patients who have been wounded in the

war. Many of the articles were sold for the benefit of the wounded. The catalogue constitutes a useful work of reference with regard to what is being done and what can be done to restore something of the old industrial life of the country.

ROYAL INSTITUTION OF GREAT BRITAIN.—Professor J. A. Fleming, D.Sc., F.R.S., will deliver a Christmas course of six illustrated lectures (adapted to a juvenile auditory) on "Our Useful Servants: Magnetism and Electricity." The subjects and dates are as follows: Magnets and the Magnetic Compass, on Dec. 27th; Electricity and Electric Currents, on Dec. 29th; the Electric Current as a Heater and Chemist, on Jan. 1st; Electricity as an Illuminator and Doctor, on Jan. 3rd; Electric Dynamos, Motors, Transformers, and Railways, on Jan. 5th; Electric Telegraphs and Telephones, on Jan. 8th. The subscription for non-members to this course is one guinea for adults, but for those under 16 half-a-guinea. Tickets may now be obtained at the office of the institution, 21, Albemarle-street, W.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—At a meeting of this society to be held at the West London Hospital on the evening of Friday, Dec. 7th, at 8.30 P.M., papers will be read as follows: (1) "The Methods of Detecting Simulated Deafness," by Mr. Richard Lake; (2) "The Methods of Detecting Simulated Blindness," by Mr. Percy Dunn. Mr. Mark Hovell, Mr. A. Bruce Roxburgh, Mr. Herbert Tilley, Mr. J. F. O'Malley, Colonel E. M. Wilson, Major Goldsmith, and Captain McCulloch are expected, among others, to take part in the discussion. Any Service medical officers or any other medical men interested in the subject of the detection of malingering are invited to take part.

THE SALARIES OF POOR-LAW MEDICAL OFFICERS.—The Poor-law Union Association has considered the following resolution transmitted by the Shipston-on-Stour board of guardians:—

That the Local Government Board be requested to rescind the Order which compels all boards of guardians to pay their medical officers at least the same salaries as those at which they were appointed, although their work has been very largely reduced, and this board earnestly solicits the help of the Association of Poor-law Unions to secure this alteration, which they have proved by experience will not only save the taxpayers many thousands of pounds a year, but also enable all boards of guardians to give medical relief to old-age pensioners and others without tainting them with pauperism.

The council of the association has disagreed with the resolution, being of opinion that the suggested arrangement was not economically sound as a matter for general adoption.

ROYAL permission has been granted to Mr. James Berry, F.R.C.S., to wear the Insignia of the Fourth Class of the Order of the Star of Roumania (with swords) conferred upon him by the King of Roumania in recognition of his services in that country under the auspices of the British Red Cross Society and the Order of St. John of Jerusalem in England during the present war. Mr. Berry has also received similar permission to wear the Insignia of the Third Class of the Order of St. Sava conferred upon him by His Majesty the King of Serbia in recognition of services which he had previously rendered to the Serbian sick and wounded.

Dr. Walter Henry Pollard has been elected Mayor of Smethwick.

THE SERVICES.

ROYAL NAVAL MEDICAL SERVICE.

To be temporary Surgeons: D. M. Black, F. L. H. MacDowel, R. Pollok, A. J. Pollock, S. A. Gibb.

The following appointments have been notified: Staff-Surgeons H. Cooper and R. McGriffin to the *Vivid*, additional, for disposal; Acting Staff-Surgeon D. R. D. Wilkie to the *Victory*, additional, for disposal; Surgeon A. J. Tozer to the *Powerful*. Temporary Surgeons: W. H. de Pre, to *Pembroke*, additional, for Chatham Hospital; A. T. Woodward to *Vivid*, for disposal; R. Pollock, to *Vivid*, additional, for Plymouth Hospital; A. J. Muirhead, to *Victory*, additional, for disposal; W. A. McKerrow, to *Victory*, for R.N. Division; H. L. G. Foxell, to *Victory*, for disposal; H. Rowan and A. L. Abel, to *Pembroke*, additional, for Chatham Hospital; E. F. Deacon, to Chatham Hospital; and H. B. Maitland, to Haslar Hospital.

ROYAL ARMY MEDICAL CORPS.

To be temporary Lieutenant-Colonels: Lieut.-Col. R. Bruce, D.S.O., Gordon Highlanders (T.F.). Temp. Major A. D. Reid, Major J. M. Cowan (T.F.), Temp. Major R. E. Wodehouse (Canadian A.M.C.).

Majors relinquishing the rank of temporary Lieutenant Colonel on ceasing to command a Training Centre: Bt. Lieut.-Col. B. A. Craig, A. N. Fraser, D.S.O.

Officers granted temporary rank whilst serving with the Staincliffe War Hospital:—As Major: J. Russell. As Captains: H. Keighley, G. S. Mott.

To be acting Lieutenant-Colonels whilst in command of a Medical Unit: Major R. N. Woodley, D.S.O., Temp. Capt. A. Jones, M.C.

Temp. Capt. J. W. Ross, Canadian A.M.C., to be temporary Major.

Temp. Major H. A. Croll, from Canadian Reserve Cavalry Regiment, to be temporary Captain.

Temporary Lieutenants to be temporary Captains: R. R. Larmour (Canadian Army Dental Corps), A. H. L. Campbell (Canadian Army Dental Corps), D. S. Macbean, L. Pern, S. C. Shanks, J. Glaister, W. J. Poole, C. W. Macpherson, V. St. L. Pinnock, F. S. Poole, W. Lessey, E. A. C. Beard, R. Curle, N. Purcell, G. W. Harrison, E. R. Thompson, D. L. Carmichael, R. J. McFeeters, H. Heathcote, F. N. Marsh, J. L. Rubidge, P. A. Hall, C. L. McDonagh, H. T. Howell, E. A. Donaldson-Sim, H. R. Greller, A. H. Porter, J. Fanstone, J. B. Ferguson, G. E. Spicer, H. E. M. Baylis, A. S. Bradley (late Staff Surgeon, R.N.).

To be temporary Captains: H. S. Moore, C. D. Kean, S. Y. Walsh, A. G. Howson, G. B. Burwell, M.C., E. M. Eaton, J. G. Greenfield, A. C. Sturdy, M.C., A. L. Gwiney (South African Medical Corps), A. H. Lawrence (South African Medical Corps).

H. D. Welply, late temporary Captain, is granted the honorary rank of Captain.

To be Second Lieutenant: G. Bidwell (South African Medical Corps).

To be temporary Lieutenants: C. W. S. Boggs, H. Parsons, H. Tipping, T. C. Graves, J. A. C. Smith, H. Love, W. H. Condell, N. S. Williams, H. S. Campion, J. B. McMorland, B. W. Skinner, D. McCormack, C. K. Attlee, H. F. Penman, W. H. Ogilvie, G. Hoffmann.

L. W. Darrah to be temporary honorary Lieutenant.

Officers relinquishing their commissions: Temp. Lieut.-Col. E. H. Starling, Temp. Lieut.-Col. J. H. Brooks (on account of ill-health). Temp. Major Sir V. Nash. Temp. Capts. J. Todd, D. R. McGregor, S. W. Fisher, W. O. Arnold, M. W. Robertson, J. C. King, L. A. Moore, C. J. Gibson, W. B. Heywood, A. R. Wight, C. G. L. Wolf, C. W. Chaplin, T. Woodman, A. Darlow, H. B. Brown, J. T. Hurst, C. S. Kingston, R. C. Thomas, R. Kennon, J. Fleming, E. W. Aiment, W. G. Lidderdale, R. Park, M. R. Mackay, J. A. Smith, M.C., W. G. T. Hepplewhite, M.C., P. J. O'Reilly, M.C., D. K. Parkes, M. P. Scanlon, F. A. Murray, J. C. D. Simpson, C. Sand, S. Samuel (on account of ill-health contracted on active service). J. S. Stewart. Temp. Hon. Capt. H. T. Thomson (having ceased to be employed with No. 11 Stationary Hospital). Lieuts. F. H. P. Willis, J. L. Scott, J. McC. Gibson, W. H. Canter, C. Hackney, W. W. Dempster, S. Nix, A. I. Simey, V. F. Kroenig-Ryan, E. Lachopelle. Temp. Lieut. R. Dunstan. Temp. Hon. Lieut. T. J. Blackshear (on account of ill-health).

SPECIAL RESERVE OF OFFICERS.

Lieutenants to be Captains: G. H. Rossdale, A. G. Anderson, R. Chapelle, F. J. C. Johnstone, J. Ratcliffe, J. Sellar, Norman B. B. Fleming, H. D. Brown, W. M. Cameron, J. Crerar, W. Donald, G. M. Hetherington, A. R. Hill, T. J. Honeyman, J. N. Jamieson, S. Johnstone, H. E. McCall, D. B. Robertson, J. Steel, H. W. Torrance, R. N. Walker, J. E. Bannen, J. Beveridge, A. La B. Clark, R. Cunningham, J. MacA. Mackintosh, J. Stirling.

To be Lieutenants: C. S. Baxter and W. Stansfield (from Manchester University Contingent, O.T.C.).

TERRITORIAL FORCE.

Lieut.-Col. E. J. R. Evatt to be temporary Colonel whilst holding the appointment of Assistant Director of Medical Services of a Division, and to remain seconded.

Lieut.-Col. C. Averill, from Assistant Director of Medical Services, to be Lieutenant-Colonel.

Major (temp. Lieut.-Col.) F. W. Burton-Fanning relinquishes his temporary rank and is restored to the establishment.

Major (temp. Lieut.-Col.) R. M. West relinquishes his temporary rank on an alteration in posting.

Officers seconded for duty with a General Hospital: Major E. N. Cunliffe, Capt. P. R. Wrigley, Capt. W. J. S. Bythell, Capt. W. A. Hooton, Capt. H. B. Ravner.

Major C. S. de Segundo, from R.A.M.C., to be Major.

Major A. C. Hartley relinquishes his commission on account of ill-health and is granted permission to retain his rank and to wear the prescribed uniform.

Major T. M. Allison is seconded for service with a General Hospital.

Capts. A. B. Whitton and S. W. Plummer to be Majors.

Capt. C. G. Strachan, from Field Ambulance, to be Captain.

Capts. J. St. A. Titmas, G. S. Haynes, M. H. Way, W. E. Alderson, and K. W. Monsarrat are restored to the establishment.

Capt. R. Gill resigns his commission.

Capt. W. Rogers, from R.A.M.C., to be Captain.

Capt. A. Don to be temporary Major whilst specially employed.

Capt. H. W. Beedman, M.C., to relinquish his commission on account of ill-health.

Capt. (temp. Major) R. M. Wilson and Capt. (temp. Major) W. E. Alderson relinquish their temporary rank on alteration in posting.

Capts. J. B. F. Wilson and J. Stokes are seconded for service with a General Hospital.

Major T. E. Hill (late R.A.M.C.) to be temporary Lieutenant-Colonel, County of Durham Medical Volunteer Corps.

Lieut. R. T. Forster (late R.A.M.C.) to be temporary Captain, East Yorkshire Medical Volunteer Corps.

S. J. Yeates (late Lieutenant, R.A.M.C.) to be temporary Captain, Lancashire Medical Volunteer Corps.

Major H. P. Berry (R.A.M.C., T.F., Reserve) to be temporary Major, Lincolnshire Medical Volunteer Corps.

J. C. French (late Surgeon-Lieutenant, 2nd Durham R.G.A. Volunteers) to be temporary Captain and Medical Officer, 2nd Battalion, Durham Volunteer Regiment.

Surgeon Lieutenant-Colonel Evan Evans (late Welsh Regiment) to be temporary Captain and Medical Officer, 1st Battalion, Carmarthenshire Volunteer Regiment.

G. L. Jones (late Lieutenant, R.A.M.C.) to be temporary Captain and Medical Officer, 1st Battalion, Anglesey Volunteer Regiment.

TERRITORIAL FORCE RESERVE.

Major B. Addenbroke, from R.A.M.C., to be Major.

Capt. E. B. C. Mayrs relinquishes his commission on account of ill-health, and is granted the honorary rank of Captain.

Capt. C. J. Coleman, from General Hospital, to be Captain.

Capt. J. Saffley, from Attached to Units other than Medical Units, to be Captain.

INDIAN MEDICAL SERVICE.

Capts. C. H. Reinhold, W. D. Wright, V. N. Whitamore, and W. J. Powell to be Majors.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, NOV. 14TH.

Mortality amongst Children.

Mr. ANDERSON asked the President of the Local Government Board whether he could give the names of the insurance companies which opposed the passing of legislation to reduce the mortality among children; and, in view of the estimate of his predecessor that the lives of 52,000 children could be saved every year by such legislation, whether he intended to proceed with it in the present session.—Mr. HAYES FISHER answered: On Monday I indicated that my department has for some time been anxious to secure for local authorities in England and Wales the same powers in regard to maternity and infant-welfare work as are already possessed by local authorities in Scotland and Ireland, but that owing to opposition from insurance organisations the legislation has hitherto been delayed. The opposition to this Bill emanates from a body who have described themselves as representing the various types of Approved Societies and the Insurance Committees of England and Wales. I am not in a position to give the names of any individual insurance companies, neither do I know them.

Mr. J. H. THOMAS: Is the right honourable gentleman not aware that the majority of these societies are the trade unions and friendly societies who are anxious for the establishment of a Ministry of Health with a view to dealing with this question, and that they are experiencing difficulties from the department with which the right honourable gentleman is connected?—Mr. HAYES FISHER: No, Sir; they are experiencing no difficulty whatever from the department of which I am president. These societies are opposing this particular Bill because they desire to deal with the larger question of a Ministry of Public Health. On the other hand, my department urges that we should use the powers which we have or which we could easily have in our possession and that will not in any way prejudice the ultimate consideration of the larger question of the Ministry of Health.

Mr. THOMAS: Is the right honourable gentleman not aware that it is felt that it will prejudice it, and that trade unions and friendly societies are opposed to maternity being handed over to what are nothing more than Poor-law associations?—Mr. HAYES FISHER: It is a matter of opinion as to whether the settlement of the smaller question would prejudice the settlement of the larger question. Our opinion is that the authorities in England and Wales ought to be possessed of the same powers now possessed by the local authorities in Scotland and Ireland. If they were possessed of those powers they could make rapid and vigorous use of them, and if they could make rapid and vigorous use of them it would largely reduce the rate of mortality.

Mr. ANDERSON: Does the right honourable gentleman see any chance of agreement on this question, seeing that while this quarrel goes on 50,000 children are being killed every year?—No reply was given.

Detention of Venereal Cases.

Mr. FINNEY asked the President of the Local Government Board whether his attention had been called to a resolution passed by the Wolstanton and Burslem union, Stoke-on-Trent, stating that, taking into account the fact that the Local Government Board was now prepared to sanction in Poor-law hospitals the treatment of venereal diseases and that persons entering such institutions to undergo such treatment had the power to take their discharge before a cure had been effected, the board of guardians was strongly of opinion that the recommendations of the Royal Commission on Venereal Diseases, and that of the Royal Commission on the Poor Law and Relief of Distress, should be carried into effect—namely, that, subject to certain safeguards against abuse, the public assistance authority should have power to detain cases of venereal disease, when medically certified to be dangerous to others; and whether he would indicate the intentions of the Government respecting the same.—Mr. HAYES FISHER wrote in reply: This question has been fully considered, but it is not the present intention of the Government to introduce legislation on the subject. It is felt that compulsory detention would deter many persons from seeking treatment, and hence it would do more harm than good. It would, moreover, in my opinion, be improper to distinguish between various institutions in this matter.

THURSDAY, NOV. 15TH.

Medical Students and Military Service: Important Announcement.

Mr. DILLON asked the Minister of National Service whether his attention had been drawn to the scarcity of medical men and to the danger that the supply of medical men after the conclusion of peace might for some years be wholly insufficient; and whether, in view of this state of things, he would see that no bona-fide medical student entered before Nov. 1st, 1917, was called up for military or any other service.—Sir AUCKLAND GEDDES replied: The outlook with regard to the supply of medical men and the question of military service as it affects medical students has been under my careful review. The general policy I have adopted is to aim at maintaining a minimum output of a thousand newly qualified medical men per annum. This year no improvement can be made. In 1918 and 1919 the output will be below the desired minimum, though, I hope, approaching it. Arrangements have already been made that students serving in the Army who have completed two years of medical studies and who had begun their studies prior to August 1st, 1914, may claim to be returned to their studies. The honourable Member's suggestions will be carefully considered in connexion with the general review.

Mortality amongst Children.

Mr. ANDERSON asked the President of the Local Government Board whether he had considered the problem of infant mortality in relation to the loss of life sustained in the war; whether he was aware that the future of this country was endangered by the needless sacrifice and maiming of infant life: whether he had made representations to the War Cabinet on this question; and, if so, whether he would continue to make representations until drastic action was taken.—Mr. HAYES FISHER wrote in reply: The answer to all the four parts of the question is in the affirmative.

National Insurance and Invalided Soldiers.

Mr. CHANCELLOR asked the representative of the National Insurance Commissioners whether he was aware that the London Panel Committee, representing the medical practitioners engaged in insurance practice in the metropolitan area, had advised their constituents to refuse to carry out the new regulations *re* invalided seamen, marines, and soldiers, issued by the Commissioners; and whether he could state the number of doctors who had notified the London Insurance Committee to this effect.—Sir E. CORNWALL wrote in reply: Since the date referred to in the question the London Panel Committee have been in communication with the Commissioners with a view to the elucidation of various points in connexion with the new regulations, and it is not, therefore, possible to know what course individual doctors in London may decide to adopt in regard to the matter referred to in the question.

MONDAY, NOV. 19TH.

Departmental Committee on the Blind.

Mr. ACLAND ALLEN asked the President of the Local Government Board whether any decision had been come to by the Cabinet as to carrying into effect the main recommendations of the Departmental Committee on the Blind (see THE LANCET, Oct. 27th, 1917, p. 654).—Mr. HAYES FISHER replied: Yes. The War Cabinet have decided to authorise the setting up of special departments in the Local Government Board and in the Local Government Board for Scotland respectively, and the establishment of an advisory committee for England and Wales and a separate advisory committee for Scotland.

TUESDAY, NOV. 20TH.

Medical Fees and the Coroners Act.

Mr. INGLEBY asked the Home Secretary whether he was aware that, in cases where a patient was brought into hospital in a moribund condition and a post-mortem examination had to be made and an inquest held, the medical officer who undertook the post-mortem and subsequently attended the inquest to give evidence was precluded by Section 2, Clause 22, of Part II. of the Coroners Act, 1887, from receiving any fee, whereas if the patient was dead before being received into hospital the medical officer was, under Section 1, entitled to receive £2 2*s.* for his services; whether he was aware that coroners had from time to time expressed their opinion in court of the injustice suffered by the medical profession in this matter; and whether he would introduce a short Bill repealing Section 2 of the Act above referred to.—Sir G. CAVE answered: The facts are as stated in the question, but I do not see my way to propose legislation on this subject at present.

URBAN VITAL STATISTICS.

(Week ended Nov. 17th, 1917.)

English and Welsh Towns.—In the 96 English and Welsh towns, with an aggregate civil population estimated at nearly 17,000,000 persons, the annual rate of mortality was 12·2, against 12·6 and 11·8 per 1000 in the two preceding weeks. In London, with a population exceeding 4,000,000 persons, the death-rate was 12·5 per 1000, and was equal to that recorded in the previous week; among the remaining towns the rates ranged from 5·2 in Swindon, 6·6 in Wimbledon, and 7·0 in Enfield, to 17·6 in Aberdare, 18·9 in Lincoln, and 20·9 in Hastings. The principal epidemic diseases caused 295 deaths, which corresponded to an annual rate of 0·9 per 1000, and included 95 from measles, 83 from infantile diarrhœa, 69 from diphtheria, 38 from whooping

cough, 9 from scarlet fever, and 1 from enteric fever. The deaths from measles, which had been 33, 56, and 70 in the three preceding weeks, further rose to 95, and caused the highest annual rates of 2·7 in Acton, 2·8 in Preston, 3·1 in Hastings and in Aberdare, and 4·6 in Stockton-on-Tees. The 1261 cases of scarlet fever and the 1437 of diphtheria under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital were respectively 75 and 18 above the numbers remaining at the end of the previous week. Of the deaths from all causes in the 96 towns 148 resulted from violence. The causes of 23 deaths were uncertified, of which 5 were registered in Birmingham and 3 each in Leicester and Liverpool.

Scotch Towns.—In the 16 largest Scotch towns, with an aggregate population estimated at nearly 2,500,000 persons, the annual rate of mortality was 11·9 per 1000 and was equal to that recorded in the previous week. The 243 deaths in Glasgow corresponded to an annual rate of 11·4 per 1000, and included 3 each from whooping-cough and diphtheria, 2 from measles, and 1 from infantile diarrhœa. The 70 deaths in Edinburgh were equal to a rate of 11·0 per 1000, and included 3 from scarlet fever and 1 from diphtheria.

Irish Towns.—The 129 deaths in Dublin corresponded to an annual rate of 16·9, or 2·0 per 1000 less than that recorded in the previous week, and included 6 from infantile diarrhœa and 1 each from enteric fever and measles. The 90 deaths in Belfast were equal to a rate of 11·9 per 1000, and included 1 death each from measles, whooping-cough, and infantile diarrhœa.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).
When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

BOURNEMOUTH, ROYAL VICTORIA AND WEST HANTS HOSPITAL.—House Surgeon. Salary £175 per annum, with board, &c.

BRADFORD CITY.—Temporary Assistant School Medical Officer. Salary 8 guineas per week.

BRISTOL ROYAL INFIRMARY.—House Physician and House Surgeon. Salary at rate of £120 per annum, with board, &c.

DERBY, DERBYSHIRE ROYAL INFIRMARY.—House Surgeon. Salary £200 per annum, with board, &c.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Resident House Surgeon. Also Assistant House Surgeon.

HAMPSTEAD GENERAL HOSPITAL, Haverstock Hill, N.W.—Resident House Physician for six months. Salary at rate of £200 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physician for six months. Salary 30 guineas.

ILFORD URBAN DISTRICT COUNCIL.—Temporary Medical Officer of Health. Salary at rate of £550 per annum.

KENSINGTON DISPENSARY AND CHILDREN'S HOSPITAL, 49, Church-street, Kensington.—Resident Medical Officer. Salary as arranged, with board, &c.

KENT EDUCATION COMMITTEE.—Temporary School Medical Inspector and Medical Officer of School Clinic. Salary at rate of £385 per annum.

LEICESTER ISOLATION HOSPITAL AND SANATORIUM, Groby-road.—Second Resident Medical Officer. Salary at rate of £300 per annum, with board, &c.

MANCHESTER, CITY EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary £400 per annum.

NEW HOSPITAL FOR WOMEN, Euston-road.—Female House Physician, Obstetric Assistant, Two House Surgeons, all for six months. Salary at rate of £50 per annum, with board, &c. Also Resident Medical Officer at House of Recovery, New Barnet, for six months. Salary at rate of £60 per annum. Also Clinical Assistants and Anæsthetists.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary £100 per annum, with board, &c.

RECUPERATIVE HOSTELS (FOR SAILORS AND SOLDIERS INVALIDED FROM H.M. SERVICES WITH NERVE-STRAIN), 43-45, Fitzjohn's-avenue, N.W.—Honorary Neurologist and Honorary Laryngologist. Also Resident Medical Officer. Salary £400 per annum.

STOKE-ON-TRENT, COUNTY BOROUGH TUBERCULOSIS SANATORIUM.—Resident Assistant Medical Officer. Salary £250 per annum, with board, &c.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician. Salary £200 per annum, with board, &c.

WARWICKSHIRE COUNTY COUNCIL.—Assistant County Medical Officer of Health. Salary £325 per annum.

WESTERN SKIN HOSPITAL, 44, Hampstead-road, London, N.W.—Vacancy on Honorary Medical Staff.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Acts at Coventry, in the county of Warwick.

Births, Marriages, and Deaths.

BIRTHS.

BARFF.—On Tuesday, Nov. 13th, at Rhosneigr, Anglesey, the wife of Lieut. G. P. Barff, R.A.M.C.—a daughter.

BLAKE.—On Nov. 17th, at Cambridge House, Portsmouth, the wife of Philip Blake, L.D.S. Eng., of a son.

LEECH.—On Nov. 18th, at High Elms Nursing Home, Manchester, Mary (*née* Walder), the wife of Captain E. B. Leech, R.A.M.C., of a daughter.

LUNN.—On Saturday, Nov. 17th, at Château de Crans, Dora (*née* van Berchem), the wife of Captain (temp. Lieut.-Col.) Lunn, M.C., R.A.M.C., of a son.

MOORE.—On Nov. 10th, at Mundens, Malmesbury, the wife of Reginald M. Moore, M.A., M.B., B.C., of a son.

SHINNIE.—On Nov. 13th, at Woodstock-avenue, Golders Green, N.W., the wife of Andrew J. Shinnie, M.D., D.P.H., of a daughter.

MARRIAGES.

BOLDERO—DUNN.—On Nov. 15th, at St. Peter's Church, Cranley-gardens, S.W., Captain Harold E. A. Boldero, R.A.M.C., to Marjorie Dunn, eldest daughter of Mrs. Arthur Dunn, Elm Park-gardens, S.W., and the late Arthur T. B. Dunn, of Ludgrove.

FOTHERINGHAM—BEATTIE.—On Nov. 14th, at St. Columba's, Pont-street, Captain James Bryan Fotheringham, R.A.M.C., to Mary, fourth daughter of Mr. and Mrs. James Beattie, of Canmore, St. Andrews, and Buckingham-street, Buckingham-gate, S.W.

NEIL—SHARP.—On Nov. 19th, at the Parish Church, Bradford, Hugh Loudon Neil, Captain, R.A.M.C., T.C., to Annette Olivia, second daughter of Mr. and Mrs. Thomas P. McKie Sharp, of St. Albans.

RAWLING—LEAKE.—On Wednesday, Nov. 14th, at St. Mary's, West Winch, King's Lynn, Major Louis Bathe Rawling, F.R.C.S., R.A.M.C., T.F., to Emily Winifred, youngest daughter of Mr. and Mrs. H. A. Leake, of West Winch, King's Lynn.

WEAKLEY—RUFFER.—On Nov. 6th, at H.B.M. Consulate and St. Mark's Church, Alexandria, Arthur Leonard Weakley, Captain, R.A.M.C., to Honora Vere, second daughter of the late Sir Armand Ruffer, M.D., C.M.G., &c., and Lady Ruffer, of Ramleh, Egypt.

WINTER—KEWLEY.—On Nov. 15th, at the Wesleyan Church, Tipton, Captain A. G. Winter, R.A.M.C., to Alice H. Kewley.

DEATHS.

ANDERSON.—On Nov. 11th, at "Limehurst," Preston, Lancashire, Joseph Anderson, M.B., C.M.

BARNARD.—On Nov. 14th, at Boston, Lincs., of acute pneumonia, Annie Thompson Barnard, M.D., B.S. Lond., D.P.H. Camb., youngest daughter of the late William Barnard, of Harlow, Essex.

BROWN.—On Nov. 15th, at Southernhay East, Exeter, George Brown, M.R.C.S. Eng., aged 72.

BURD.—On Nov. 15th, at Newport House, Shrewsbury, Edward Burd, M.D. Cantab., Consulting Physician to the Salop Infirmary, aged 91.

FOX-RUSSELL.—On Nov. 6th, killed in action, Captain John Fox-Russell, M.C., R.A.M.C.

JONES.—On Friday, Nov. 16th, at East Meon, from cardiac failure, Josephine, beloved wife of Captain Edward T. Jones, R.A.M.C.

MACGREGOR.—On Nov. 15th, at Rose Cottage, Oswaldkirk, Malton, aged 62, Peter MacGregor, F.R.C.S. Ed., J.P., of Rashcliffe, Huddersfield.

PHILLIPS.—On Nov. 6th, killed in action, Captain Edwin Phillips, R.A.M.C.

RANSOME.—On Nov. 14th, at Queen Mary's Military Hospital, Whalley, Lancashire, Herbert Fullarton Ransome, Lieut., R.A.M.C.

SAWYER.—On Nov. 19th, at Bath, Ramon Alexander Sawyer, M.R.C.S., in his 54th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, *and when accompanied by blocks it is requested that the name of the author, and if possible of the article, should be written on the blocks to facilitate identification.*

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

We cannot undertake to return MSS. not used.

Offices: 423, STRAND, LONDON, W.C. 2.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C. 2, are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

Subscribers abroad are particularly requested to note the rates of subscriptions given on page 6.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the rates shown, whatever be the weight of any of the copies so supplied.

Notes, Short Comments, and Answers to Correspondents.

A CURIOUS ACTION OF MERCURY ON ALUMINIUM.

To the Editor of THE LANCET.

SIR,—I shall be much obliged if you can give me any information explanatory of the following. The other day when making some liq. hyd. perchlor. I used an aluminium spatula in transferring the dry salt to the scale-pan, and also, by chance, an aluminium funnel in introducing it into the bottle. About an hour later I found the funnel choked with a white powdery substance, but washed it out without paying much attention. The next day I noticed on the end of the spatula, which had been laid down unwashed, an extraordinary *growth*, there is no other word for it, of white fibrous-looking substance. There were strands of it 3 to 4 inches long and ¼ inch thick, curling about the end of the spatula, and looking like the white ash of pieces of burnt string. The substance was extremely light, a breath blowing it away, and the cloud of fine powdery fumes resulting was distinctly irritating to the throat, and, I thought, produced some headache and nausea. Subsequent experiment showed that the minutest particle of dry $HgCl_2$, the finest dust of it, if placed on a surface of aluminium, produces in a few minutes a growth of this fine fibrous-looking, ash-like substance. So rapid is the growth that the movement is distinctly visible, and within half an hour a pillar 2 or 3 inches long projects, curving into all sorts of queer shapes if unsupported. It reminded me of the "serpent egg" pills of my boyhood, which, when ignited on a saucer, projected a curling ash representing a serpent. The surface of aluminium is rapidly corroded away in the process. I presume that an aluminate of mercury is formed in this reaction, but I can find no mention of it in books that I have, and an old and experienced dispensing chemist to whom I showed the experiment was equally unfamiliar with it.

Aluminium is so much used nowadays that it seems to me to be worth knowing that the slightest dust of corrosive sublimate on its surface produces this rapidly growing mass of powdery substance, which, at any rate in my case, was irritating and noxious. I produced a really extraordinary growth by dusting over an aluminium medicine cup with the powder and standing it under a glass case for 48 hours.

I am, Sir, yours faithfully,

Bromsgrove, Nov. 2nd, 1917. H. CAMERON KIDD.

*** Our consulting chemist has confirmed these interesting observations; the phenomenon is remarkable, and is correctly described in detail by Dr. Cameron Kidd. We note, however, that this peculiar reaction is described in some of the modern text-books on chemistry. Thus in "Inorganic Chemistry," by F. S. Kipping and W. H. Perkin (London: W. and R. Chambers), the following paragraph on aluminium amalgam appears (p. 612): "When a little mercury is placed on a bright sheet of aluminium and well rubbed on the sheet with a damp rag, the aluminium becomes coated with a thin film of mercury. By breathing on the sheet, and thus forming a film of moisture, a chemical action is set up; the aluminium dissolved in the mercury decomposes the water, giving aluminium hydroxide which rises as a bulky white powder from the surface of the metal." This seems to us to be the phenomenon described by our correspondent.—ED. L.

AN ARTISTIC ALMANAC FOR 1918.

Messrs. Abdulla and Co. have published an almanac from the sale of which it is hoped that at least £1000 will be realised for the funds of the British Red Cross Society. On each of 12 sheets is a monthly calendar and a picture representing some British sport typical of the month. The contributing artists in black and white are Mr. Maurice Greiffenhagen, A.R.A., Mr. W. Hatherell, R.I., Mr. Fred Leist, R.B.A., Mr. Frank Reynolds, R.I., Mr. Harry Rountree, and Mr. Joseph Simpson, R.B.A. The artists in colours are Mr. Christopher Clark, R.I., Mr. Lionel Edwards, A.R.C.A., Mr. Frank Gillett, R.I., Mr. Gilbert Holiday, Mr. C. M. Padday, and Mr. Bernard Partridge. Copies of the almanac may be obtained from any tobacconist, or post free from Messrs. Abdulla and Co., 173, New Bond-street, W. 1, price 1*s.* 4*d.*

DRUG HABITUÉS IN NEW YORK.

A RECENT weekly bulletin of the Department of Health, City of New York, gives reasons for believing that the number of drug habitués in the city runs into thousands. Years ago the chief habit-forming drug in use was opium and its derivative morphine. Subsequently cocaine was extensively used, so much so, in fact, that the words *coke*, *happy dust*, and *sniffing* came into common use. In recent years, however, a change has taken place and cocaine is at present little used by the drug habitués. Whether this is due to the legal restrictions on the sale of cocaine or to a change in taste on the part of the habitués, cannot be determined. Over 90 per cent. of the drug habitués now make use of heroin, mostly hypodermically, but frequently also by snuffing. The Department of Health provides under the new State Narcotic Law for the commitment to an institution until "sufficiently treated" of any person voluntarily applying for treatment for drug addiction. During the first month after the announcement was made the number of applicants was 62, of whom 54 were men and 8 women.

A Medical Student (Canada) is advised to consult one of his teachers, to whom, in case of difficulty, we shall be glad to lend any assistance in our power.

C. E. W.—Fees are not paid in the circumstances mentioned to medical officers of institutions, although the fairness of this proceeding has often been questioned. It would not be advisable, if a similar case should arise, to refuse to give evidence, at any rate unless the authorities of the institution are prepared to endorse such a course.

C. E. S.—Officers of the Royal Army Medical Corps and civilian practitioners in military employment are forbidden by the Army Council to give certificates prejudging the fitness or unfitness of men for military service, but they may supply their patients with statements describing their physical condition or medical history for the information of the medical boards.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Tuesday, Nov. 27th.

MEDICINE (Hon. Secretaries—Charles R. Box, W. Cecil Bosanquet): at 5.30 P.M.

Short Papers:

On the Manifestations of Serum Disease which may follow Intrathecal Injections.

Friday, Nov. 30th.

EPIDEMIOLOGY AND STATE MEDICINE (Hon. Secretaries—William Butler, Major Greenwood): at 5 P.M.

Paper:

Surg.-Colonel V. Soubbotitch (of the Serbian Army): A Pandemic of Exanthematous Typhus in Serbia in 1914 and 1915.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

Course of Lectures on the Anatomical and Physiological Principles underlying the Treatment of Injuries to Muscles, Joints, and Bones:—

MONDAY.—5 P.M., Lecture II.:—Prof. A. Keith: The Principles and Practice of John Hilton.

WEDNESDAY.—5 P.M., Lecture III.:—Prof. A. Keith: The Principles and Practice of H. O. Thomas.

FRIDAY.—5 P.M., Lecture IV.:—Prof. A. Keith: The Methods applied by G. F. Stromeyer, W. Adams, and J. Wolff.

The Lectures will be illustrated by specimens from the Army Medical Collection now on exhibition in the Museum and also by specimens from the College Collection.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Gray: Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women.

TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Arthur Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Gray: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Arthur Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N. 15

MONDAY.—2.30 P.M., Children's Diseases: Dr. T. R. Whipham. Gynæcological Diseases: Mr. F. L. Provis. Surgical Operations: Mr. E. Gillespie. 3 P.M., Medical In-patients: Dr. R. M. Leslie. 7 P.M., Venereal Clinic: Dr. Kinsella.

TUESDAY.—10 A.M., Surgical Operations: Mr. J. Howell Evans. 2.30 P.M., Medical Out-patients: Dr. A. G. Auld. Surgical Out-patients: Mr. Howell Evans. Nose, Ear, and Throat Diseases: Mr. C. H. Hayton. X Rays: Dr. Metcalfe. 3.30 P.M., Special Demonstration:—Dr. A. J. Whiting: Selected Medical Cases, Auricular Flutter.

WEDNESDAY.—2.30 P.M., Medical Out-patients: Dr. T. R. Whipham. Diseases of the Skin: The Dermatologist. Eye Diseases: Mr.

A. S. Worton. Operations:—Nose, Ear, and Throat: Mr. Hayton; 4 P.M., Eyes: Mr. Worton. 5 P.M., Venereal Clinic: Mr. E. Gillespie and Mr. Benians.

THURSDAY.—2.30. P.M., Medical Out-patients, Dr. A. J. Whiting. Surgical: Mr. H. W. Carson. X Rays: Dr. Metcalfe. Gynæcological Operations: Dr. A. E. Giles. 3.30 P.M., Medical In-patients: Dr. R. M. Leslie.

FRIDAY.—2.30 P.M., Surgical Out-patients: Mr. Gillespie. Eye Diseases: Mr. A. S. Worton. 7 P.M., Venereal Clinic: Mr. E. Gillespie and Mr. Benians.

SATURDAY.—2.30 P.M., Surgical Operations Mr. H. W. Carson.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 21st, 1917.

Date.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Nov. 15	...	49	47	38	40	41	Overcast
,, 16	...	53	49	39	39	40	Overcast
,, 17	...	50	45	38	38	38	Foggy
,, 18	...	51	49	39	44	46	Overcast
,, 19	...	55	52	44	44	45	Overcast
,, 20	...	67	57*	45	51	51	Cloudy
,, 21	0·06	70	59	50	56	56	Raining

Other information which we have been accustomed to give in these "Readings" is withheld for the period of the war.

BOOKS, ETC., RECEIVED.

KING, P. S., AND SON, London.
Instead of the Tavern. By J. W. H. Theobald and A. F. Harvey. 1*s.* net.

PRIVATELY PRINTED, New York.
Letters Concerning the War between an American and a Relative in Germany.

G. P. PUTNAM'S SONS, London and New York.
A Text-book of War Nursing. By Violette Thurstan. 3*s.* 6*d.*

UNIVERSITY OF LONDON PRESS, LIMITED, London.
University of London Calendar, 1917–1918. 6*s.* net.
Regulations for External Students, September, 1917. 1*s.* 6*d.* net.

UNWIN, T. FISHER, London.
The Road to a Healthy Old Age. By T. Bodley Scott, M.R.C.S. Eng., L.R.C.P. Ed. 4*s.* 6*d.* net.

WILLIAMS AND NORGATE, London.
Koktoprazipitinogene und Koktoimmunogene. Von Dr. R. Torikata. 21*s.* 6*d.* net.

Communications, Letters, &c., have been received from—

A.—Capt. W. Appleyard, R.A.M.C.; Messrs. Arnold and Sons, Lond.; Anglo-French Drug Co., Lond.; Messrs. Armour and Co., Lond.; Prof. Sir Harry Allen, Melbourne; Capt. J. L. Aymard; Prof. F. W. Andrewes, Lond.; Lieut.-Col. J. G. Adami, A.D.M.S.; Mr. H. W. Abbott, Lond.; Dr. M. Atal, Lond.; Admiralty Medical Dept., Director General of; Sir Robert Armstrong-Jones, Lond.; Messrs. Allen and Hanburys, Lond.

B.—Sir Thomas Barclay, Leicester; Mr. C. Brereton, Lond.; Board of Agriculture and Fisheries, Lond.; Board of Education, Chief Medical Officer of, Lond.; Surg.-Gen. Sir David Bruce, C.B.; Bury Infirmary, Sec. of; Messrs. Burroughs Wellcome and Co., Lond.; Dr. B., Elstead; Messrs. Boots, Nottingham; Dr. G. B. Brown, Maidstone; Mr. F. C. Blakiston, Edginswell; Mr. E. Baker, Birmingham; Dr. C. H. Browning, Lond.; Mr. J. Bosch, Lond.; Messrs. W. H. Bailey and Son, Lond.; Mr. J. Bellows, Gloucester; Messrs. F. P. Baker and Co., Lond., Mr. W. Bryce, Edinburgh; Capt. A. W. Byrne, R.A.M.C.; Surg. W. T. Beswick, R.N.; Mr. J. Brown, Blackpool.

C.—Dr. L. Cobbett, Cambridge; Capt. E. M. Corner, R.A.M.C.; Dr. M. A. D. Crawford, Dublin; Capt. C. F. Coombs, R.A.M.C.; Capt. A. Compton, R.A.M.C.; Messrs. Geo. Curling, Wyman and Co., Lond.; C. E. W.; Messrs. J. and A. Churchill, Lond.; Mr. H. A. Collins, Croydon; Cooper Laboratory for Economic Research, Watford; Mr. J. Q. Costin, Market Harborough; Clare Hall Sanatorium, South Mimms, Medical Supt. of; Chelsea Hospital for Women, Sec. of; Messrs. E. Cooke and Co., Lond.

D.—Mr. H. Dickinson, Lond.; Sir Bryan Donkin, Lond.; Capt. L. L. Duncan; Dr. H. H. Dale, Lond.; Lieut.-Col. T. P. Dunhill, R.A.M.C.; Messrs. A. De St. Dalmas and Co., Leicester.

E.—Messrs. Evans, Sons, Lescher, and Webb, Lond.; Epsom College (London Office), Sec. of.

F.—Messrs. H. Frowde and Hodder and Stoughton, Lond.; Factories, Chief Inspector of, Lond.; Messrs. Favarger.

G.—Mr. H. B. Gairdner, Lond.; Dr. M. Giordano; Guernsey, Medical Officer of Health of; Dr. J. Geoghegan, R.A.M.C.; Mr. J. M. Geraty, Penmaenmawr; Messrs. Genatosan, Lond.

H.—Dr. A. J. Hall, Sheffield; Mr. C. W. Hansel, Bedford; Mr. J. T. Henderson, Pietermaritzburg; Hunterian Society, Lond.; Acting Hon. Sec. of; Messrs. W. Heffer and Sons, Cambridge; Messrs. J. Heywood, Manchester; Mr. T. A. Harrison, Claverdon; Dr. W. N. Heard, Parkstone; Dr. T. M. Hovell, Lond.; Capt. G. S. Hughes; Messrs. Abel Heywood and Son, Manchester; Dr. J. O. Hollick, Dorridge.

I.—Mr. Inman, Sheffield; Inspector-General of the Insane, Sydney; Dr. S. T. Irwin, Belfast; *The Illustrated London News* and *Sketch*.

J.—Mr. M. H. Judge, Lond.; Messrs. Johnson and Phillips, Charlton.

K.—Mr. S. Kaufman, Toronto; Kensington Dispensary, &c., Sec. of; Mr. T. L. Kan, Lond.; Kent Education Committee, Maidstone.

L.—Mr. G. C. Lloyd, Smethwick; Sir W. Arbuthnot Lane, Bart.; Local Government Board, Lond.; Dr. T. Lumsden, Lond.; Messrs. Lee and Martin, Birmingham; London Press Exchange, Lond.; Messrs. Lever Bros., Port Sunlight; Messrs. Lehmann and Stage, Copenhagen; Mr. T. Law, Abbeyfeale; Leicester Corporation, Medical Officer of Health of; London Hospital Medical College, Sec. of.

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O.—Dr. W. D. O'Kelly, Dublin; Lieut. W. M. Oakden, R.A.M.C.; Mr. J. Offord, Lond.

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T.—Dr. R. H. Trotter, Huddersfield; Dr. F. Thomson, Lond.; Dr. O. F. N. Treadwell, Lond.

U.—United States Public Health Service, Washington.

V.—Mr. P. C. Varrier-Jones, Cambridge; Vitamogen, Lond.; *Vaccination Inquirer*, Lond.

W.—Mr. C. T. Webster, Lond.; Messrs. Watson and Sons, Lond.; Dr. T. J. Wood, Bradford; Capt. J. F. West, R.A.M.C.; Dr. L. A. Weatherly, Bournemouth; Prof. G. Sims Woodhead, Cambridge; Western Skin Hospital, Lond., Sec. of; Messrs. Jas. Willing, Lond.

Y.—Mr. P. Yates, Manchester; Sir Arthur Yapp, Lond.; *Yorkshire Evening News*, London Sub-Editor of.

Letters, each with enclosure, are also acknowledged from—

A.—Mr. G. Aubrey, Cheltenham; Mr. S. J. Abrahams, Manchester; Addenbrooke's Hospital, Cambridge, Sec. of; Lieut.-Col. J. G. Adami; A. E. B.

B.—Dr. A. Burns, Peterborough; Dr. W. G. Bigger, Mitcham; Bristol Royal Infirmary, Sec. of; Surg. H. H. Budd, R.N.; Messrs. Butterworth and Co., Lond.; Bedford County Hospital, Sec. of; Mr. W. Barnard, Lond.; Dr. A. Bevan, Lond.

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G.—Mr. S. H. Griffiths, Lond.; Mr. J. F. Gell, Nottingham; M. Gibson, Edinburgh; G. H.; Mr. J. W. G. Grant, Cardiff; Lieut. W. P. P. Gordon, N.Z.M.C.

H.—Mr. E. M. Harvey, Lond.; H.M. Stationery Office, Lond.; Haslemere Nursing Home; Major A. F. Hurst, R.A.M.C.; Dr. H.; Lieut. J. W. Huddleson.

I.—International News Co., Lond., Sec. of; Ingham Infirmary, South Shields, Sec. of; Incorporated Society of Trained Masseuses, Lond., Sec. of; I., Thaxted.

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N.—Northamptonshire Sanatorium, Northampton, Sec. of; New York Life Insurance Co., Lond.; Northampton Corporation, Acct. to the; Norwood Sanatorium, Beckenham, Sec. of; N. C.

O.—Oldham Royal Infirmary, Sec. of.

P.—Preston, &c., Royal Infirmary, Sec. of; Mr. I. H. Pearse, Lond.; Mr. R. Pengois, Rio de Janeiro; Lieut. W. J. Purdy, R.A.M.C.; Mr. J. Parrott, Lond.; P. S. C.

R.—Dr. A. N. Robertson, Benenden; R. L. B. S.; Messrs. Reuters, Lond.; Mr. C. B. Richards, Bridge of Allan; Recuperative Hostels, Lond., Sec. of.

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T.—Mr. W. H. Tuckett, Loughborough; T. A. H.

W.—Whitehaven Borough, Treas. of; Mr. A. Wilson, Lond.; Capt. W. O. Welply, R.A.M.C.; Capt. P. J. Watkin, R.A.M.C.; Worcestershire Asylum, Bromsgrove, Clerk to the; Mrs. Ward, Blackrock.